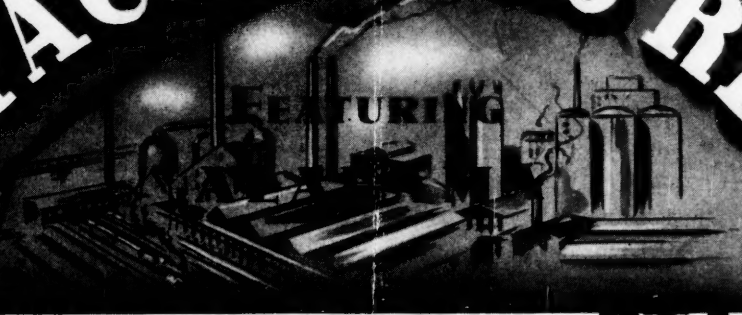
SCIENCE AND INDUSTRY

MANUFACTURERS RECORD



FEATURING

STAG

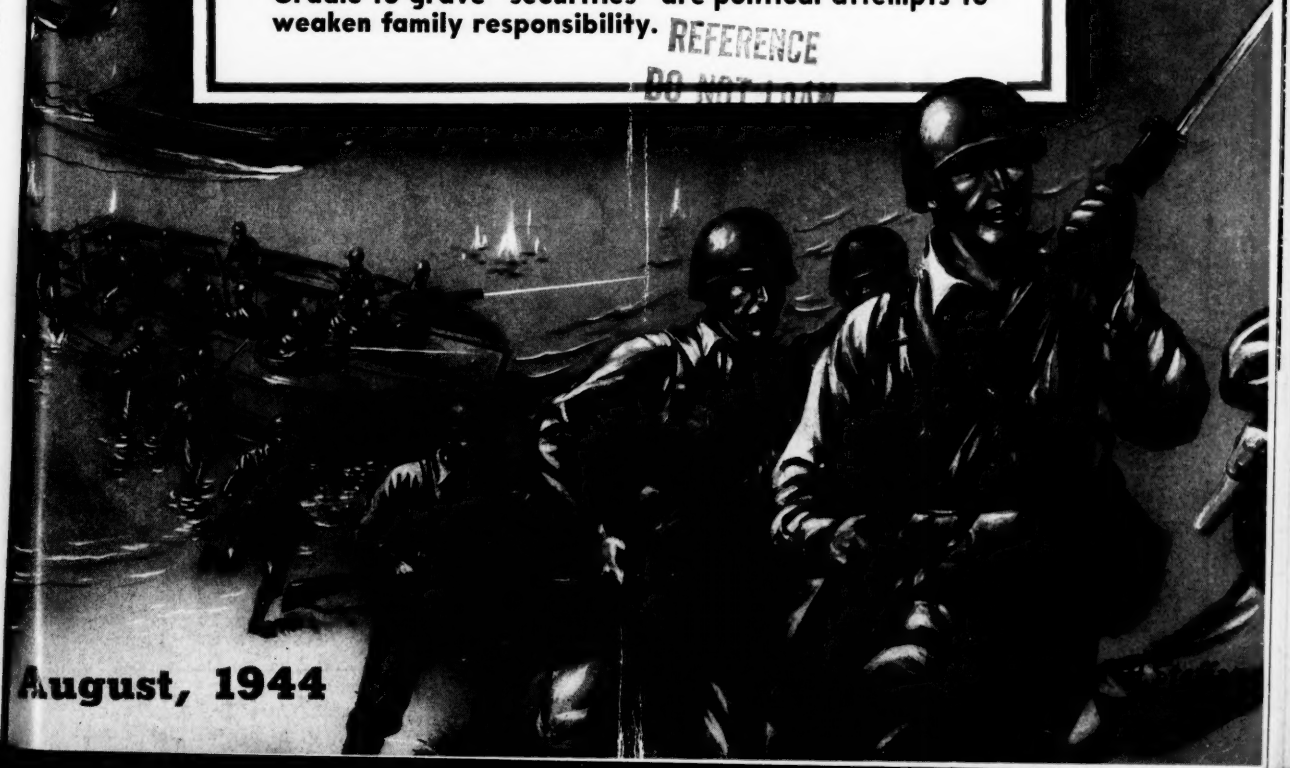
DON'T SMASH the ATOM

Dictators, and the mush-minded "do-gooders" who invariably pave the way for them, have tried many times to substitute other institutions for the family in their plans for erecting a political structure. All such institutions fail but the family persists. It is the social atom.

The family persists because of its basic importance as an economic as well as a biologic unit in a civilized society. The family must be self sustaining as well as reproductive. It must be independent financially just as it must be chaste morally. It must have freedom from political subsidization and domination so that it can cherish and maintain its own independent strength and integrity and pass its priceless heritage on to the generations of families of the future.

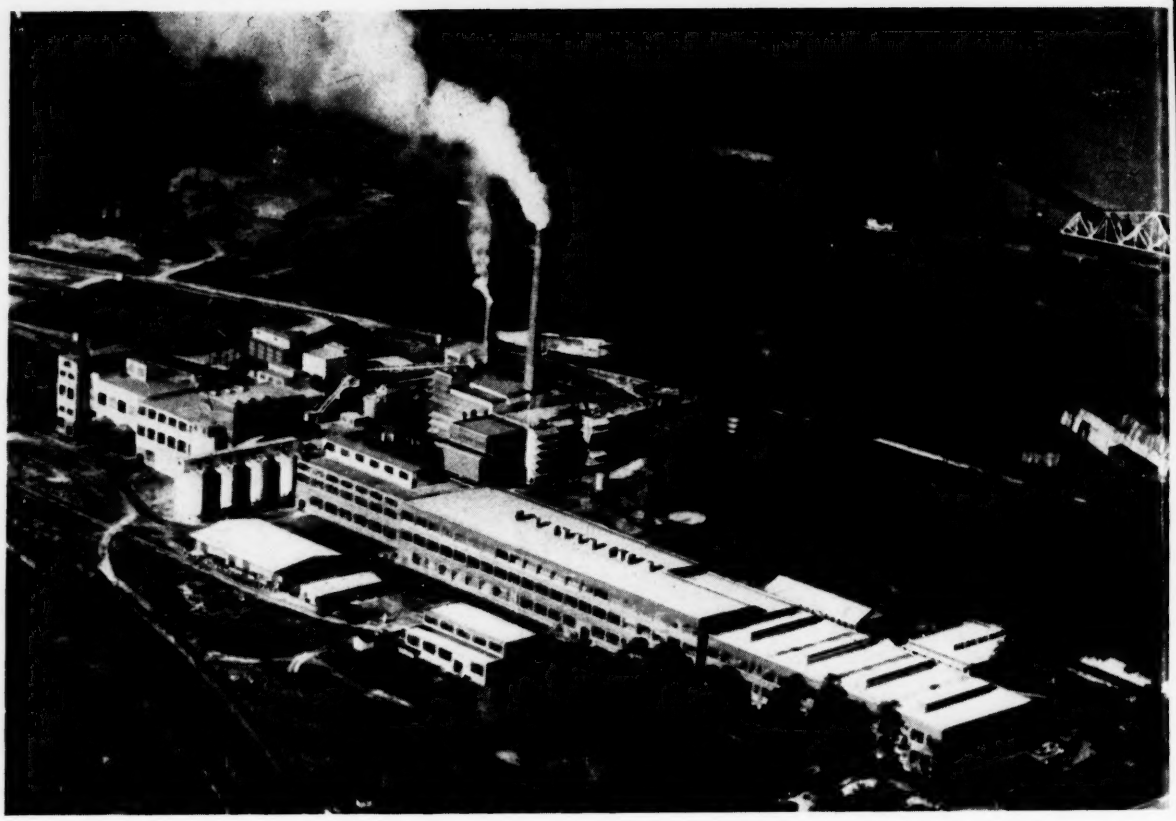
Cradle to grave "securities" are political attempts to weaken family responsibility.

REFERENCE
DO NOT LOAN



August, 1944

XUM



Sulphate paper mill for Hollingsworth & Whitney Co., Mobile, Ala.

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MANUFACTURERS RECORD

ESTABLISHED 1882

A Publication for Executives

Volume 113 **AUGUST, 1944** **Number 8**

EDITORIALS

Plain Common Sense 63
The Future Beckons 64

ARTICLES

"Miracle Gas"—Helium Presents Challenge to Industry and Science 104
Fuel Conservation—by W. E. E. Koepler 106
Farm Work Quickened by "Soil Mixer" 107
Huge Plant First in Oklahoma to Make Finished 100-Octane Gasoline 108
South's Contracts During July Reach Peak of Year So Far—by Samuel A. Lauver, News Editor.... 110
Revere Expands Aluminum and Magnesium Operations 112
Oklahoma Conservation Cost Set at $175,000,000. 114
South Gets Big Share of 100-Octane Program —by Philip A. Stone 116
Rail Freight Speeded by Radio Orders 118
The Revised Price Control Act—by Hull Bronson. 120
Virginia Maintains 47,000 Miles of Roads—by R. P. Ellison 128

DEPARTMENTS

Little Grains of Sand 58
Southern Industrial Expansion in July 122
Industrial News 124
Trade Literature 126
Index for Buyers 178
Index to Advertisers 180

ALABAMA 65

Letters 66
The Old and the New 70
Today and Tomorrow 71
Historical Background 72
Land and Climate 73
People 73
In the War Effort 75

Manufacturing 75
Iron and Steel 78
Textiles 79
Chemical Industry 79
Ship Building 81
Forest Products Industries 81
Food Products Industries 82
Stone, Cement, etc. 83
Miscellaneous Industry 84
Scientific Research 85

Minerals 85
Iron Ore 86
Flake Graphite 86
Clay and Shale 87
Sand and Gravel 87
Stone 87
Oil and Gas 88
Water 88

Agriculture 89

Forests 92

Power and Fuels 94

Transportation 95
An Integrated System 97

State Government 98
Education 100
Recreation Opportunities 102

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The Strange Case of The Clogged Drain

It came gradually . . . first a stain on the ceiling, then a steady drip, drip, drip . . . That was when a workman first noticed it, and before enough hands could be summoned to clear shelves and move packing cases, high-priority merchandise was ruined.

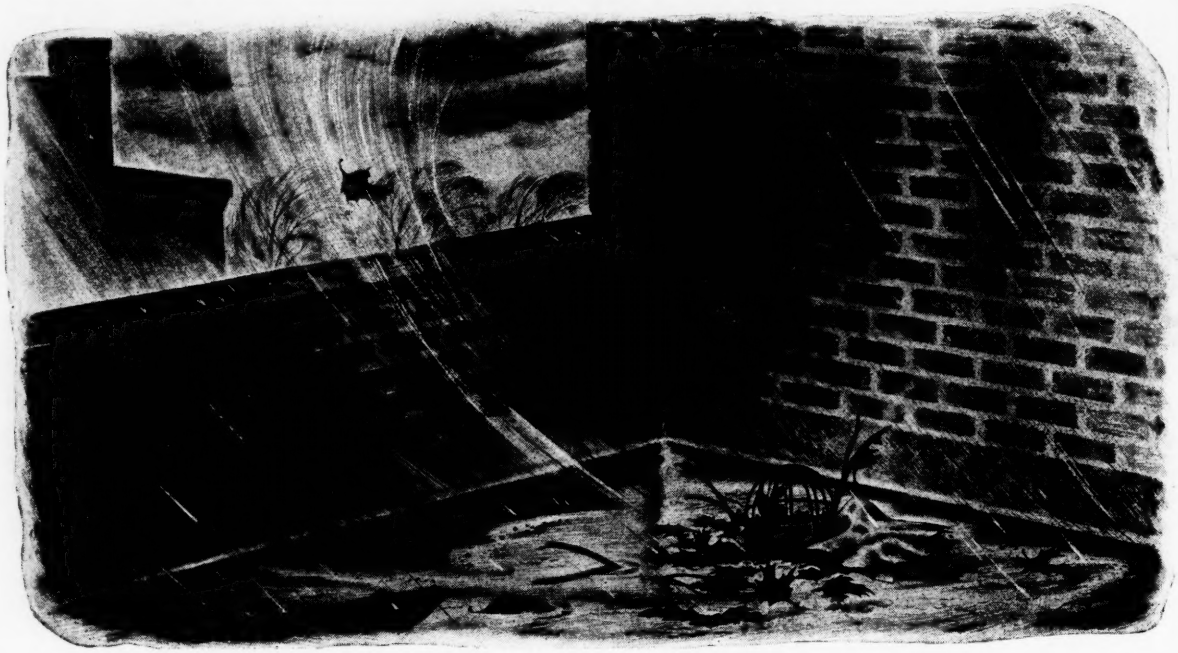
THE G.M. had the maintenance engineer on the carpet in no time. "A fine mess," he said, grimly.

"I can't believe it," protested the maintenance man. "No pipes up there. And the roof is sound as a nut."

But an inspection a few minutes later solved the mystery. Debris, leaves, twigs—carried onto the roof by a recent windstorm—had clogged a roof drain, not equipped to handle an overflow.

Your Barrett Approved Roofer knows where to look for unsuspected causes of roof failure. His experience has taught him that roof leaks are frequently caused by just such obscure weaknesses as clogged drains, defective masonry and damaged flashings.

Regular roof inspection service is one of the many ways in which the Barrett Approved Roofer can relieve you of worrisome maintenance problems. He and his trained staff can supply practical advice and help, and make necessary repairs, or replacements with minimum interference to your production schedules. Get in touch with him today—before trouble begins.



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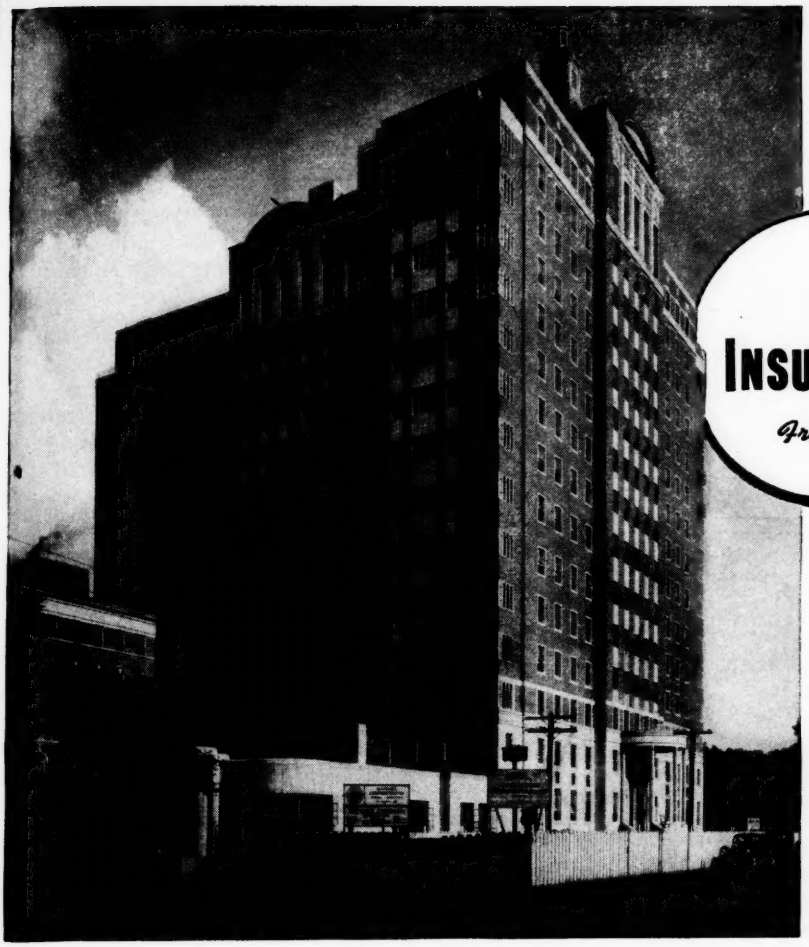

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One of Birmingham's finest buildings is the 15-story Jefferson Hospital. Insulation for cold storage rooms, refrigeration lines and ducts designed, manufactured and installed by Badham.

In modern building, insulation begins with the blueprints, and Badham engineers plan their installations as a vital part of each construction project. Today, Badham insulation is on the job in many parts of the globe . . . in hospitals, warships, transports, supply vessels, food storage plants, industrial buildings and homes.

Your own profits, now and after the war, will be increased by the fuel economy and production efficiency that go hand-in-hand with expert insulation. Badham service is competent and complete, covering every phase of insulation research, engineering, manufacture and installation. We invite the opportunity to consult on your building, modernization and re-conversion plans.

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The Birmingham POST

A Scripps-Howard Newspaper

Little Grains of Sand

"Little drops of water, little grains of sand,
Make the mighty ocean, and the pleasant land."

Woodrow Wilson, the First World War President, declared: "We do not need less criticism in time of war, but more. It is hoped that criticism will be constructive, but better unfair attack than autocratic repression. Honesty and competence require no shield of secrecy."

The term "American Industry" is used so often nowadays the question of its exact meaning was bound to crop up. A comprehensive definition is yet to be written, but one thing is certain: it is not a few super-duper Wonder Men dreaming up Valhallas for the working men, nor is it vast enterprises operating on such illusionary concepts. "American Industry" is the activities and achievements of free men, their energetic struggles, imaginative ingenuity and productive excellence. Without freedom, industry would neither be American nor industrious. Without freedom, it could not be "American Industry."

"Little Business" is watching keenly the "post-war planning" now so much in vogue among "Big Business," the theorists and bureaucrats, and will be grateful for any help that comes out of it. Quite without realizing it, however, "Little Business," not being able to sit around awaiting Solomonesque suggestions from on high, is already gravitating into its post-war trend. Every plan or move it makes in preparation for the day when the shooting stops, is a step in that direction. When the post-war plans of the Big Boys are complete and available, the Little Fellows will be well along on "Plans" they did not know they had.

There are some right smart mathematical whizs on our staff, a necromancer, a delver into tea leaves ,a man with a divining rod, and a rather stodgy bunch of two and two adders. There isn't much we won't tackle.

So, H.R. 5024 was a cinch. H.R. 5024 was submitted to the 78th Congress, dated June 14, 1944, by Representative Jennings Randolph (D., W. Va.,). In less than two months, mind you, we've worked out one representative case as propounded by the bill.

H.R. 5024 is a bill to provide Federal aid to the States for the development, construction, improvement and repair of public airports. Allocating this aid involves such easy reading as this formula: *m* equals (the sum of the following quantities: *A* squared over *D*, divided by the summation of *A* squared over *D*; *B* squared over *D*, divided by the summation of *B* squared over *D*, and *C* squared over *D*, divided by the summation of *C* squared over *D*), the entire business being multiplied by an upper-case *M*. Then you divide by 3.

Just to see how it works out, we took a representative case, Two Horse, Iowa. Without bothering you with the meanings of *A, B, C, D* and *M* or with the slide rules now limp with exhaustion, we can report that Two Horse is entitled under H.R. 5024 to one (1) village green for bowling and a Class 3 fish pond beside the monument to General Custer. Two Horse must furnish the fish.

The U. S., at the recent Bretton Woods Monetary Conference agreed (subject to ratification) to put up more than twice as much cash and commitments as the second largest contributor (Britain) to the Fund and Bank, yet actually had less reason to be concerned about stabilization of currencies than perhaps any other nation represented at the conference.

Our export and import trades are of comparatively minor importance, so the reliability and stability of foreign monies means that much less to us than to other world powers. Using national income averages for 1938-39 and export and import averages for 1934-38, the U. S. exported goods valued at only 3.9% of its national income and imported 3.3%. The United Kingdom, on the other hand, exported 10.1% and imported 17.9% of its national income, while Canada exported 22% and imported 14.9%.

Pawnbrokers should add a fourth ball to their centuries-old symbol if the New Dealers capture a fourth term. The implication . . . three terms of squandermania have seriously impaired the nation's resources . . . a fourth term will put these resources permanently in hock.

Hillman, Murray, Dubinsky and Tobin seem to fancy themselves in togas and laurel wreath toupees . . . *A la* Caesar. So, let's see: Hillman, a Lithuanian, born there in 1887, came to the U. S. A. in 1907; Murray, born 1886 in Scotland, came here in 1902, naturalized in 1911; Dubinsky, sired in Poland *circa* 1892, settled here in 1911, became a citizen 5 years later; and Tobin, a native-born Irishman, here since 1889. The $64 question: Who gets burned by the melting pot?

Value is an expression of the importance attributed to a good (singular for goods) by one individual. Price is value expressed in terms of some commonly exchanged commodity. Value is determined in the mind of either a buyer or a seller. Price represents an agreement between the two as to value. The seller represents supply, the buyer demand. Price is the compromise arrived at between them as to value.

Wealth is the collective term for those things which are felt to be related to the gratification of human wants. Money is merely an accepted medium of exchange. It is a convenient yardstick for the measurement of wealth and an instrument which facilitates its exchange.

Only NON-FERROUS AND STAINLESS FASTENINGS

WHEN you have a toothache you go to a dentist. When you need legal advice you go to a lawyer. Both men are specialists.

By the same token . . . when you need non-ferrous and stainless fastenings come to the house that specializes on them . . . Come to the Harper Organization which is concerned exclusively with the manufacture of bolts, nuts, screws, washers, rivets and specials of Brass, Copper, Naval Bronze, Silicon Bronze, Monel and Stainless . . . an organization not concerned with common steel.

This specialization brings refinements in product quality and "extras" in service to customers that are most rare. Start these "extras" your way by writing on your company letterhead for a complimentary copy of a 4 color, 104 page catalog and reference book.

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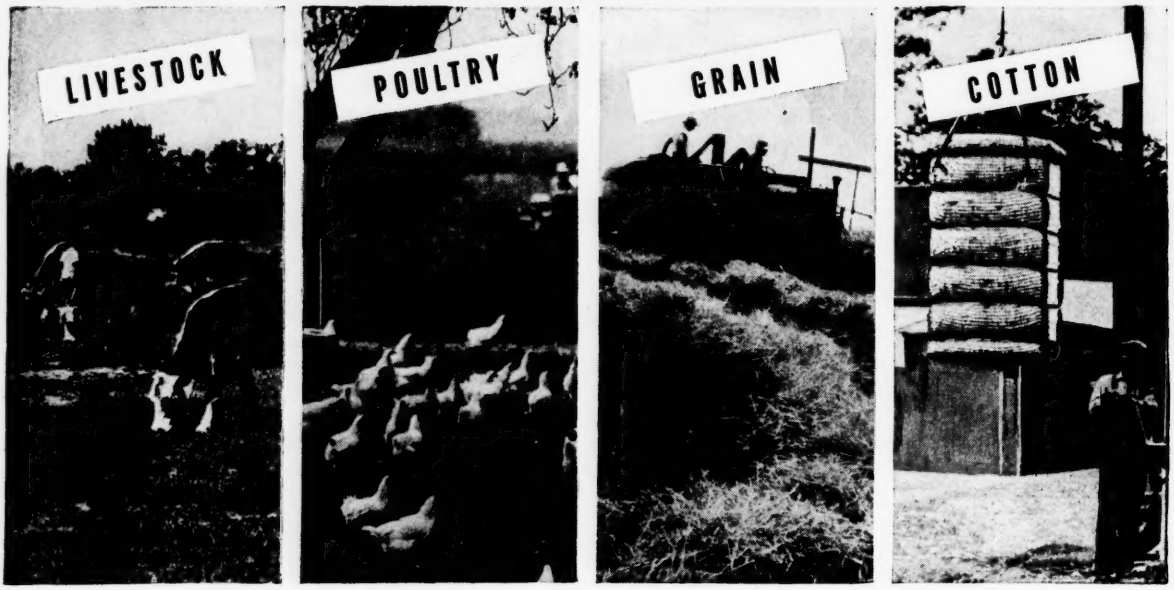


The "4 Cash Incomes Per Year" plan lays the foundation for a sound prosperity

THE war has brought many new industries to the South—aviation, shipbuilding, chemicals, refineries and others. It is too soon to say what changes may come into these industries by the time the last soldier comes home. But of this we are certain: the South will be in a much sounder position economically, than it was in 1919.

Why? Because basically the South depends on the land for its wealth—and southern agriculture has taken a decided change for the better. Instead of relying on one cash crop, more and more southern farmers are turning to the "4 Cash Incomes" plan. This is simply a program which assures 4 or more cash incomes during the year, such as cotton, tobacco, beef cattle and hogs in the fall or winter, lambs and wool in the spring, small grain in the summer with dairy products, chickens and eggs all during the year. If one crop should fail, the farmer still has at least three incomes to support him.

Years ago the Tennessee Coal, Iron & Railroad Company realized the basic soundness of this plan and began to promote the idea actively, through advertising in farm papers and over the radio. Agricultural extension services pushed diversification harder than ever. Bankers loaned money. Local chambers of commerce cooperated. Meat packers were induced to expand in the South.

The war stepped up the demand for food and livestock products . . . and this time southern farmers were ready with beef cattle, hogs, sheep, chickens and grain crops. They are reaping a "golden" harvest and the chances are that there will still be a tremendous demand for food products long after the war is over.

Once again, intelligent planning, backed up with active promotion, has helped to lay the foundation for a sound prosperity.

U·S·S Steel Products manufactured in our mills include:

- Rolled, forged and drawn steel products.
- Structural shapes, plates, bars, small shapes, agricultural shapes, tool steel, strip, hoops, cotton ties.
- Black, galvanized and special finish sheets.
- Wire and wire products.
- Reinforcing bars.
- Rails, track accessories, axles and forgings.
- Culverts, Panelbilt prefabricated steel buildings, cold-formed steel sections.
- U·S·S High Tensile Steels and U·S·S Abrasion Resisting Steels.
- Semi-finished products, pig iron and ferromanganese.

TENNESSEE COAL, IRON & RAILROAD COMPANY

Birmingham, Alabama

United States Steel Export Company, New York

UNITED STATES STEEL

"What Enriches the South Enriches the Nation"

PLAIN COMMON SENSE

Ever since the days of the slaughtering of the little pigs and the plowing under of growing food crops, through the gamut of subsidies, government spending, price controls and rationing, abysmal ignorance has been shown by the "political planners" regarding the working of the fundamental economic law of Supply and Demand as it operates in a society based on the principle of free enterprise.

These "political planners" started out by attempting to regulate supply. They must have based their plans on the assumption that while millions of people were in dire need—the subjects of public as well as private charity—the way to feed and clothe and house these people and to create employment for them was to produce less so that each unit of production would cost the consumer more. They planned to curtail supply but neglected to plan to activate demand.

Later, under the spur of government spending, government gifts (you can't call subsidies by any other name and describe them better), government's encouragement of labor's demands and the stimulation of the outbreak of war abroad climaxed by our entry into it, the attention of the pi-eyed plotters of pamperdom was belatedly called to the fact that demand was catching up with and outstripping a supply that had been deliberately made inadequate even for normal times, because "we planned it that way."

So in its turn we see starry eyes in concrete skulls focused on the problem of controlling demand. It must be noticed that in both the case of controlling supply and later demand, the plans of the planners were aimed at curbing each in its turn. In the first case the plans were aimed at curtailing supply and not at increasing demand. In the second case the reverse was true, but in neither case were plans made with the purpose of increasing one to balance the other. The planners always planned to decrease.

Not training in theoretical economics but just plain common sense is needed to convince any sensible man that you can not deduct from supply or deduct from demand, either at the same time or at different times, and have progress as a result.

It is true that a perfect balance of the scales between supply and demand is never attained, but the people who make up industry (farming included) and who create supply, and these same people who as customers create demand by using the wealth they have produced, are better able to keep the scales of progress in approximate balance, both nationally and locally, than are creatures of government favors whose plans must primarily be politically palatable to the leaders of the party in power to whom they owe their sinecures.

The pseudo thinkers who have attempted, and are still attempting to plan to have the national government gradually swallow all of us individuals into its capacious belly after thoroughly masticating us in its omniverous maw apparently do not know the difference in meaning between the words value and price, wealth and money.

All of the preceding is based on the assumption that the "political planners" have wished to improve the economic and social conditions of our people—with an eye kept on their own political preferment of course—and have gone astray because their conceptions of the problems faced were limited by their lack of knowledge and common sense.

Suppose this kindly assumption is incorrect and that, instead of just plain lack of understanding of American psychology and the ability to make plans that conform with the American way of life, they are deliberately trying to warp American thought and displace the national structure based on individual freedom with a collectivist state.

Political tampering with the law of Supply and Demand must be judged by every man and woman among us with the following thoughts in mind: (1) has it worked, and is it working, (2) are the planners capable of making plans that will work and are they sufficiently unselfish to do so, and (3) are the planners deliberately planning to destroy our faith in our tried and proved institutions so that they may be displaced gradually by an overlordship located at 1600 Pennsylvania Avenue in Washington?

The MANUFACTURERS RECORD knows that past political tampering has not worked and that it is not working at present. It can not bring itself to believe that a subversive influence controls the tampering and so it is forced to the belief that the planners are just plain dumb and their plans infantile attempts to control a situation that they cannot even comprehend.

THE FUTURE BECKONS

(Alabama As We See It)

"Sheathe your swords, take back your men, take back your horses; you will need them down there to develop that great fertile country for which God and nature have done so much."

A great man of the north, later to become the President of a nation united forevermore, said that. It was General Grant, compassionate and far-seeing, as Robert E. Lee, a man of the South, offered him his gallant sword.

". . . that great fertile country for which God and nature have done so much." Grant was thinking of the whole South, but if asked to select a state as representative of the combined greatness and potentialities of the section, it is not unlikely he would have chosen Alabama.

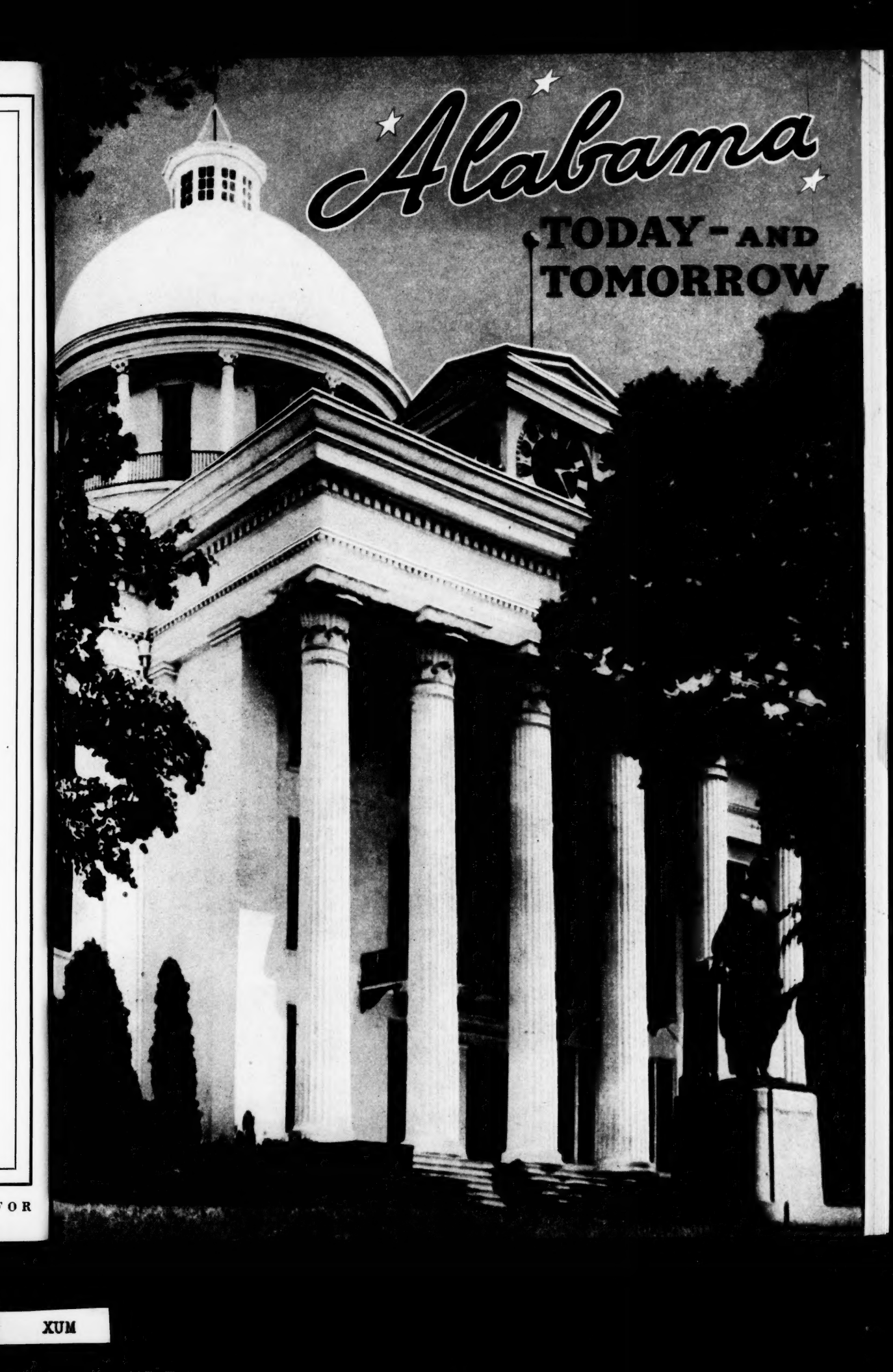
Alabama was truly great then. It is far greater today, and its greatness will shine brighter and with doubled glory tomorrow. The Alabama of Washington and Jefferson's time, of Lee and Grant's, was rich largely in possibilities. The same rich soil and beneficient climate, the same minerals and earthly fluids, the same industrially strategic positions, the same will and drive and lofty goals, were present then. But these riches were mostly undeveloped, awaiting the moulding mind and hand of man.

Since then, Alabama has been unstoppable, its intellectual capacity and vigor too strong to abide a secondary place, its intrinsic values too great to be ignored. Today Alabama stands alongside other renowned states, equally potent, similarly imbued with desirable ambitions, exceptionally endowed with energy and an abundance of Nature's most valuable capital assets.

All of the South's good things are to be found in Alabama.

There is the mellowness of the old, the bustle of the present, the promise of the future. There is the stately ancestral mansion, the coal and iron mines teeming with human activity. A forest of virgin timber surrounds a forest of active smokestacks. An easy-going crossroads general store receives some of its goods from the busy port of Mobile. A great oak which sheltered Hernando de Soto holds its hoary moss over a laboratory wherein chemical problems are solved. Here is a great hall where once swirled crinolines beneath thousand-candled chandeliers, down the road a conference room where commercial decisions of international scope are made. One encounters a mellow tradition alongside of a plan for the future. It is powerful, versatile, gracious Alabama.

In Alabama man has found the full life. He has found the temperate elements that make for comfort, the fertile soil which sustains all life, the raw materials with which to work and build, and the possibilities for advancement and progress without which man cannot be truly happy and content.


Alabama
TODAY - AND
TOMORROW

STATE OF ALABAMA

EXECUTIVE OFFICE

MONTGOMERY

CHAUNCEY SPARKS
GOVERNOR

July 11, 1944

Manufacturers Record
Baltimore, Maryland

Gentlemen:

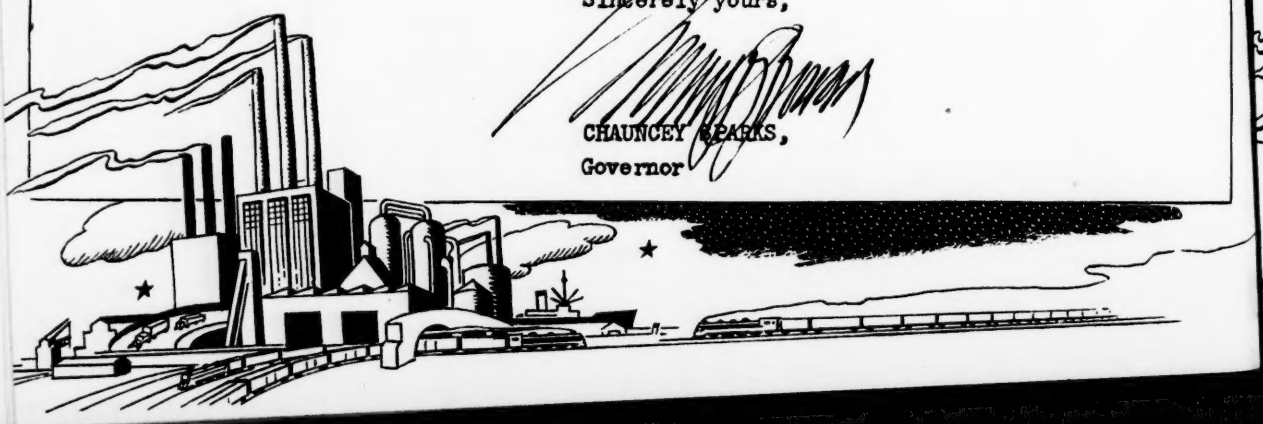
We in Alabama are gratified that you plan to feature our State in your August issue. The Manufacturers Record has been a friend and champion of the South through the years and we welcome the opportunity to have the story of our great State told briefly through the pages of your magazine.

Rich in its heritage, blessed with great natural resources, Alabama is forging ahead in many fields of activity and endeavor. We are planning definitely, carefully, and confidently for the future. We know that new frontiers and opportunities will be opened up in our State. We are looking to the careful utilization and conversion of our resources both human and material, and we intend to avoid exploitation of any of these resources.

As we go forward in the development and building of our own State, we invite the people of other sections to consider Alabama, study her opportunities, witness her developments, and know her people; a State of fascinating contrasts combining the old and the new; a profitable place in which to engage in business, industry, or agriculture, and a State peculiarly adapted to successful and happy living. This office, the Alabama State Planning Board, other State departments, and our Alabama State Chamber of Commerce are working closely together in the upbuilding of our State and we shall welcome inquiries from those who would know more of Alabama and her opportunities.

Sincerely yours,

CHAUNCEY SPARKS,
Governor



STATE OF ALABAMA
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Birmingham, Ala.
July 24, 1944.

Manufacturers Record
Baltimore, Maryland.

Gentlemen:

Convinced of the advantages and opportunities of our state and conscious of the progress which is being made, the Alabama State Planning Board is interested in having the story of our state briefly told in the August issue of your magazine. The State Planning Board is an agency of the State Government and is, as the name implies, a general planning agency for the state. The Board is engaged in a number of broad technical studies which are basic in the proper development of our state. These studies include the proper use of natural resources, economic development studies, public work studies, local planning programs and others.

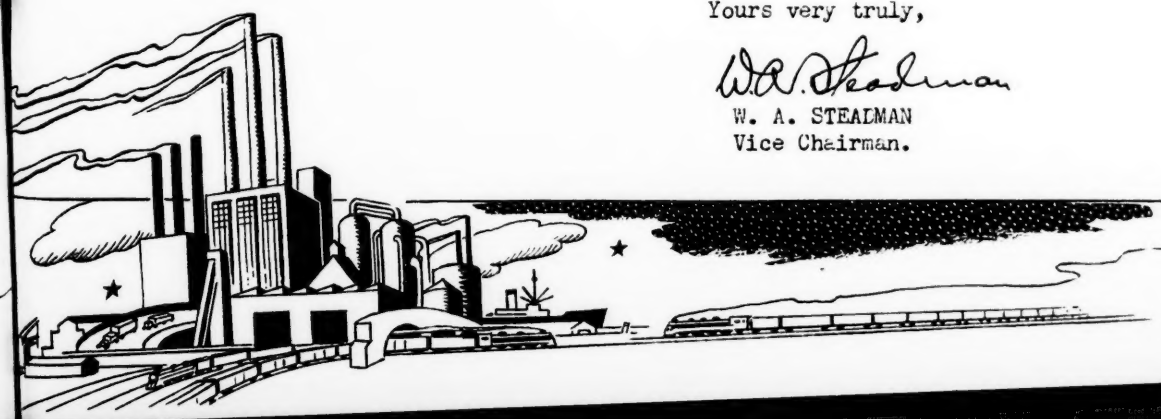
In preparing this feature story on Alabama, you have found every evidence of real progress and remarkable achievement. These conditions are due in large measure to the united and cooperative effort of all agencies within our state. The State Planning Board while an agency of Government feels that its planning should be within the framework of private enterprise and that no economic activity should be undertaken by any government agency that private enterprise can and will undertake. In Alabama the efforts of government, agriculture, industry and business are coordinated for the full development of our state. This situation makes Alabama a more desirable state in which to live and a more profitable one in which to do business.

As we carefully plan and work for the future welfare of our state, we feel that those of other sections will find in Alabama in the post-war period the opportunities which they are seeking. Here there is a oneness of purpose on the part of our people, a friendly and helpful attitude on the part of government and a state whose departments and activities are geared to future progress and improvement of our economic position.

Yours very truly,

W. A. Steadman

W. A. STEADMAN
Vice Chairman.



XUM

ALABAMA

STATE CHAMBER OF COMMERCE

MONTGOMERY 1, ALABAMA

July 14, 1944

Manufacturers Record
Baltimore, Maryland

Gentlemen:

The Alabama State Chamber of Commerce representing organized business and industry in our state is pleased to note that your August issue will be devoted largely to telling the story of present day Alabama. We in Alabama know that we are a fortunate people living in a pleasant land. We know further that our state has experienced tremendous development in recent years and that there has come to our people a new hope, a new vision and a new determination. In the postwar period we believe that Alabama will offer to her own people and to others who will come and join us, opportunities for achievement that will be unequaled in any other section.

For some years prior to the war, developments in Alabama were attracting national attention especially in the fields of Industry and Agriculture. Because of the National Defense Program, followed later by our entry into the war, our state like many others has reached unprecedented levels in industrial production and expansion. We in Alabama are carefully planning that we may maintain the gains which have come to us.

As we face the future we are conscious of certain definite and distinct benefits which have come to us out of the war period. These will accelerate, in the postwar period, the definite trend of industry to the South, and to Alabama in particular, which had been established prior to the war. We have tremendous additional facilities for which definite peacetime uses will be found. We have a large reservoir of trained labor such as we have never had before. Many of our existing industries have obtained new additional equipment and have gone into the manufacture of finished and more diversified products. Many of our smaller plants under the pressure of war production have done highly satisfactory and efficient work on subcontracts. Alabama management has gained experience, confidence and "know-how" and Alabama labor a training and skill beyond that previously possessed.

Alabama is in the heart of a section which is rapidly becoming the new industrial empire of our Nation. Our state possesses in abundance the three great resources which will be basic and fundamental in the industrial development of the future. These resources are our People, Power and

ALABAMA

STATE CHAMBER OF COMMERCE

MONTGOMERY 1, ALABAMA

Materials. Our People are native born and well grounded in sound American principles. They are intelligent, loyal and quick to learn. Most important of all we have a youthful and steadily increasing population. Power will play an even larger part in future industrial development and the processes and methods steadily coming into use are making power of greater importance. Alabama is possessed of great coal fields. The state ranks high in the Nation in the production of hydro-electric power. Either by-product or natural gas is available to industry in most sections of the state. A new oil field of promise has just come into production in Southwest Alabama. These resources give ample power to match our manpower.

The raw materials of our state are too numerous to recount. These include inorganic materials such as our wide variety of minerals and organic materials such as most of the crops which bear promise of the greatest industrial use. In addition, the semi-finished products of many of our existing industries furnish raw materials for a host of new industries which will further finish and refine these products.

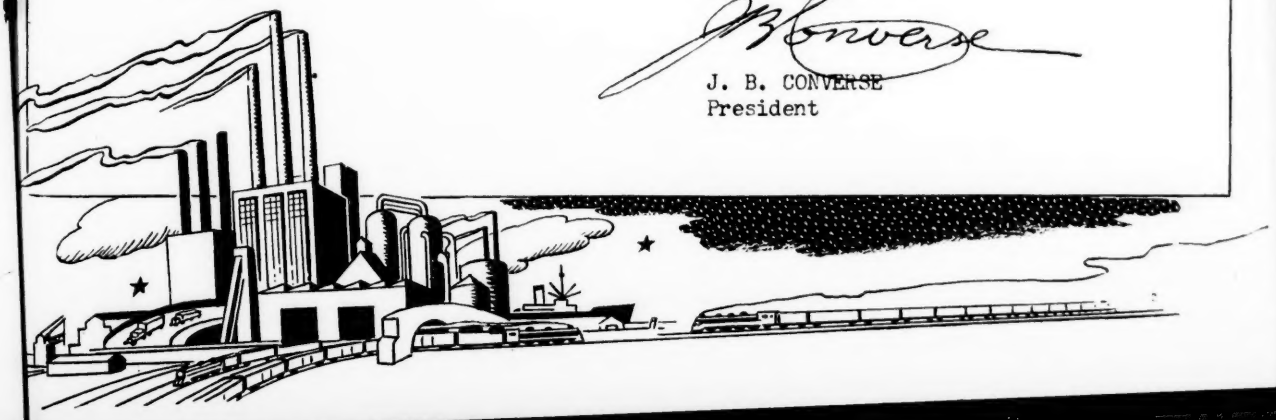
The Alabama State Chamber of Commerce is a state-wide organization seeking the full development of our state and its resources. Its work and its interests extend to every community and section. It maintains the closest possible contacts with local Chambers of Commerce, state departments and other agencies. On its staff are experienced men including a competent industrial engineer and an agricultural specialist. The State Chamber of Commerce is ready and prepared to answer all requests for information and inquiries concerning our state.

To those who are seeking the opportunities of tomorrow we say "Look Alabama Over", for Alabama is looking and moving ahead.

JBC:eos

Yours very truly,

J. B. CONVERSE
President



XUM

The New and the Old In Alabama

ALABAMA

Today and Tomorrow

ALABAMA is a state of fascinating contrasts. Situated in the heart of the Deep South, steeped in the traditions and history of this section of our country, with her rich heritage and great natural resources as a background, she is today a great and modern commonwealth bearing high the torch of progress in many fields of endeavor. Here the old and the new are blended to give strength and stability to her present position and to make sure a future filled with opportunities for greater achievements.

Historic landmarks of the Tennessee, Coosa and Tallapoosa Valleys hear the roar of great power dams and see the thousands of workers going to and from textile plants, shipyards, aluminum plants and other modern industries. Old settlers still living, who remember when there was no City of Birmingham, now with Vulcan can look down from Red Mountain on a great industrial empire of some four hundred thousand persons.

Air conditioning and elevators have come to the old State House in Montgomery and an electric roll call and page system will record the voting of the Legislature in the same Chambers that echoed to the oratory of Confederate statesmen. Great four-motored bombers, piloted by boys from North and South, roar daily over the dome of the first Capitol of the Confederacy.

Stately old mansions of Alabama's Black Belt and Tennessee Valley built with slave labor a hundred years ago look out upon miles of rich pasture lands on which graze herds of purebred cattle or listen to the hum of a nearby modern industry.

The historic buildings and homes of Mobile watch the thousands from every state come to view the famed Azalea Trail and Bellingrath Gardens while the workers from great industries, docks and shipyards crowd old Bienville Square.

A one crop system of agriculture has given way to diversified and scientific farming including besides cotton, peanuts, truck crops, fruits and vegetables, poultry, a great livestock industry, corn, oats, hay and such specialties as package bees, gladioli, water cress and tung nuts.

Contrasts equally marked can be found in the physical and economic life of the state. From the rich lands of the Tennessee Valley and the prosperous Sand Mountain Plateau, through the great Mineral District and the famed Black Belt and the Coastal Plain section to the Gulf Coast, there is a wide va-

riety of soils, a diversification of natural resources and considerable range in the climatic conditions.

There is much in Alabama today of which her citizens can be justly proud. Her state government has been streamlined; her treasury holds a surplus of $40,000,000; her industries are expanding; her agriculture prospering; her educational system progressing steadily; her natural resources being conserved and wisely utilized. These are but a few of the things that give confidence, determination and enthusiasm to Alabama's almost three million citizens as they look to the opportunities which the future holds for them and for those of other sections who will join them as they travel toward new horizons.

Historical Background

Before the dawn of history the Red man came from the Southwest to find in a River Valley in what we now call the Gulf Country, a land where he decided to clear away the thickets and make himself a home. He called it "Alabama." The word in the Muskogean tongue literally means "Vegetation Gatherers," or "Thicket Clearers," but a more inclusive meaning would be "This is our homeland. We will clear the thickets and plant our seeds. Here we rest." The first white people to reach this river called it the "river of the Alabamas."

DeSoto and his Spaniards passed through the lower Gulf Country in 1540, traversing what is now Alabama. France founded the Colony of Louisiana in 1699 and Fort Louis de la Mobile at Twenty-Seven Mile Bluff, on Mobile River, became the Capital in 1702. Mobile at its present site dates from 1711. Great Britain got possession of the French territory East of the Mississippi in 1763. Spain acquired the Mobile Country by conquest in 1780. The Mississippi Territory the Eastern half of which was what is now Alabama, was formed in 1798. Andrew Jackson and his Tennessee troops broke the backbone of the Creek Indian Confederacy at the Battle of Horseshoe Bend on the Tallapoosa River, March 27, 1814. The State of Mississippi was created in 1817, and the Eastern half of the area became the Alabama Territory. On December 14, 1819, Alabama was admitted as a state of the American Union.

The settlement of the territory North of the Mobile Country was by English speaking people, who came from Virginia, the Carolinas and Georgia, with some through Tennessee to settle the old Cherokee Country, but the larger influx was over the old Indian path from the Atlantic Coast to the Tombigbee Country.

St. Stephens on the Tombigbee River, founded originally as a Spanish fort in 1789, was the territorial Capital. Huntsville was the temporary seat of

State Archives and History Building

Site of Battle of Horseshoe Bend

State Government, and the Legislature in session there accepted Governor William Wyatt Bibb's selection of Cahawba to be the first State Capital site. Tuscaloosa was chosen as the seat of Government in 1826 and the Capitol was there from 1827 to 1847 when Montgomery became the permanent State Capital.

The Choctaw, Chickasaw, Creek, and Cherokee Indians, by land sessions of 1805, 1814, 1816, 1830, 1832, 1836, withdrew from their claims in what is now Alabama, to go West of the Mississippi. The Creeks were removed in the winter of 1836 and 1837, and all Indian land holdings were by that time allotted for white settlement.

Alabama seceded from the Union January 11, 1861. The Confederate Government was formed by a convention which met at Montgomery on February 4, 1861 and on the 18th of that month Mr. Jefferson Davis of Mississippi was inaugurated President of the Confederate States, at the present State Capitol at Montgomery.

Alabama passed through the throes of Reconstruction which ended with the election as Governor of George Houston in 1874, to emerge into an era of Industrial development which had its most definite forward movement at about the turn of the century.

The creation of the state Rail Road Commission, in 1881 and the State Department of Agriculture in 1883, presaged an active development of the natural and material resources of the State.

Land and Climate

Alabama comprises an area of 51,998 square miles. Its greatest length from Tennessee's southern boundary to the Gulf of Mexico is 336 miles. Its greatest breadth from the Georgia line to the borders of Mississippi is 175 miles. Cheaha Mountain is 2,407 feet above sea level and is the state's highest point. Stretching from the southernmost tip of the Appalachian range of mountains in the northeastern part of the state to the shores of the Gulf the state has a mean elevation of 500 feet above sea level.

Nature was lavish with this land and gave it a wide variety of tillable soil. Some two hundred different types of soil and an equable rainfall encourage the growth of most of the agricultural products known to the temperate zone and give to it more than four thousand four hundred species of trees and plants; a greater variety than is produced throughout the countries of Europe. Average annual rainfall is 53.87 inches and is generally well distributed throughout the year. Average annual temperature ranges from 60 degrees F. in the northern part of the state to 67 degrees near the coast, with an average for the state of 63.9 degrees F. The mean temperature for January is 48.2 degrees and for July 81.7 degrees. This mild temperature and ample rainfall give to the state an unusually long growing season between killing frosts. This season in the northern part of the state is 190 days and in the extreme southern 300 days.

The blessing of such a climate is reflected in an all-year outdoor working season, less expensive housing, clothing and heating, and the health of the people to which an outstandingly efficient State Health Department also contributes. Experience has proven that these climatic conditions make a healthy people capable of high productivity and efficiency in industry.

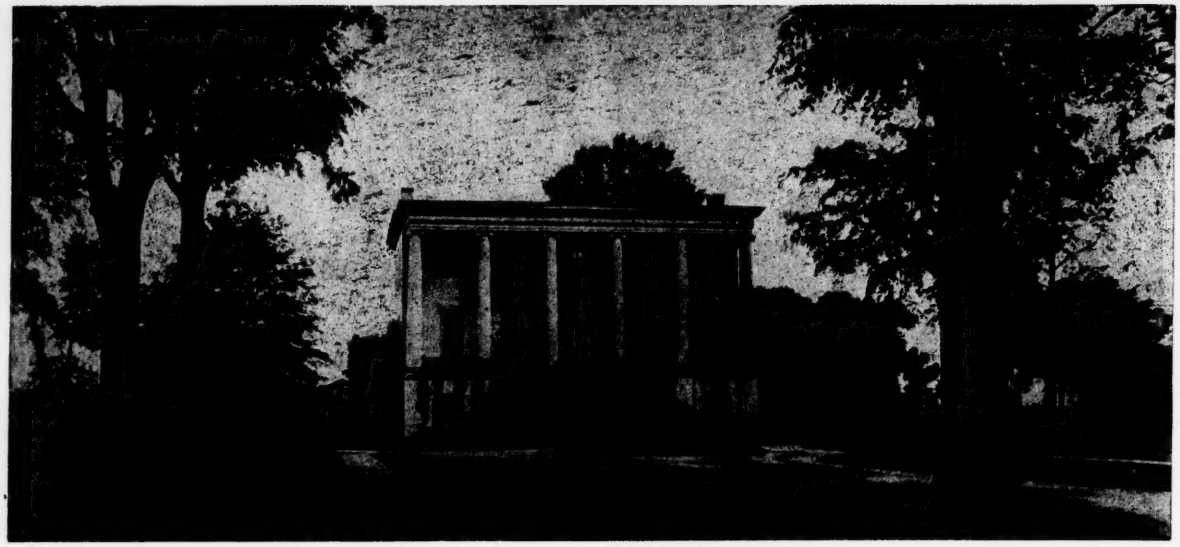
Contrasted with the rigors of severe winters and the shorter hours of daylight of other sections, the advantages of this part of the country for work and general well-being are easily seen.

People

Alabama's greatest asset and basic resource is found in her people. The 1940 census lists its population at 2,832,961 people living in the state. Of these 99.6 per cent were native born, 98 per cent of native parentage and more than 87 per cent were born within the state. This is a truly American citizenship well grounded in the soundness of American principles.

Most important in facing the future is the fact that Alabama has a youthful and steadily increasing population. The Southern States with only 29 per cent

First White House of the Confederacy

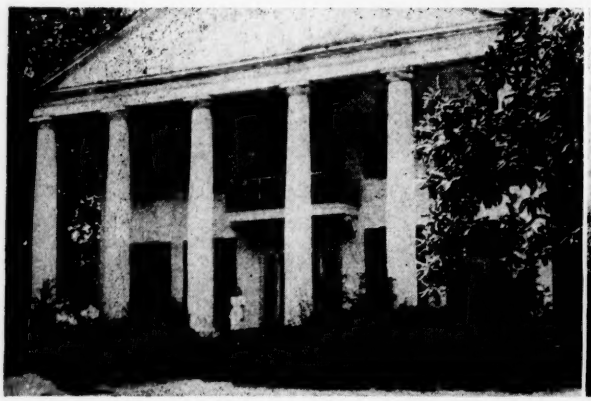


A Beautiful Home in a Southern Setting

of the Nation's population, supply each year 51 per cent of the Nation's increase in population. Alabama with a population of less than three million people has had an excess of births over deaths each year for the last ten years of from 33,394 to 45,052 or an average annual excess of 38,723. Many states in other sections with populations two and three times as great as Alabama's have a proportionate excess of births over deaths far below this figure. The medium age of Alabama's population is 23.8 years while that of the Nation is 29 years and that of many states with congested urban populations runs much higher.

With this native born, and steadily increasing population, Alabama offers to present and future industry an ample and continuing supply of labor. Operating experiences of numerous industries with plants in many sections of the state have proven that Alabama's labor is intelligent, quick to learn, high in productivity, loyal and dependable. Possessed of youth and with steady improvement in education and training each year, it adjusts itself readily to changing conditions and methods.

Grace and Beauty are Illustrated by Alabama Homes such as these



Alabama in the War Effort

Since the beginning of the national defense program, the State of Alabama has been filling an important role. Its resources, productive capacity and manpower have all been directed towards making the greatest possible contribution to the war effort.

Its natural resources and its existing industries are such a nature as to give the state a position of prime importance in the war effort, as for example in the iron and steel industry which in all of its branches has been operating at an all-time high, with plants and capacity increased.

The state's lumber industry has contributed an increasing supply of vital materials. Shipbuilding facilities on the Gulf Coast and on the Tennessee River have been greatly expanded to meet the need for vessels of various kinds.

The textile industry has handled tremendous contracts for its products, including clothing and other supplies for the armed forces. The state's mines, pipe plants, cement industry, by-product plants, chemical industry, structural steel industry, and many others have furnished needed supplies.

In addition to the expansion of existing industries, a number of new industries have been established to meet war's demands. Among these are a giant aluminum plant, two chemical warfare plants, shell forging plant, airplane modification plant, smokeless powder plant, bag-loading plant, de-tinning plant, two new shipbuilding plants and others.

Ft. McClellan at Anniston has been expanded to many times its peace time operation, and there also has been established the Anniston Ordnance Depot. In the Ozark-Enterprise area in Southeast Alabama, Camp Rucker has been established; Camp Sibert at Gadsden, and the great Reconsignment Depot in Montgomery are other military establishments.

It is, perhaps, in the field of aviation that the state has made its greatest contribution to the training of our armed forces. Maxwell Field has been greatly expanded and has been the headquarters for air corps training in the Southeast. Gunter Field has also been established at Montgomery. Other large training fields in the state are Craig Field at Selma; Napier Field at Dothan; Brookley Field at Mobile; Courtland Air Base at Courtland; the fields at Decatur, Tuscaloosa and Birmingham; also a large field for training negro pilots at Tuskegee.

The latest figures released by the War Production Board show that major war supply and facility contracts and allocations in Alabama total more than $1,557,000,000.

Alabama's agriculture has made a most remarkable contribution to the entire war program and was immediately placed upon a war-time basis. In spite of labor shortages and the difficulty of getting additional farm machinery and equipment, the state's farmers have pressed on to meet every requirement that was made of them, and in most cases have exceeded the goals that were set. The percentage of increase in the production of food and fibers for the war effort in Alabama has been outstanding.

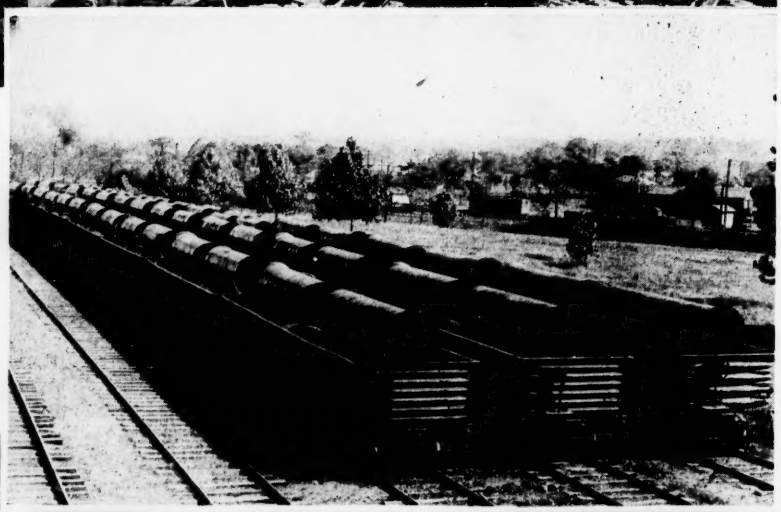
Vulcan

—MANUFACTURING

The annual value of products manufactured in Alabama is more than twice the value of all farm products. Large industries using the state's natural resources have been successfully operating over long periods of years. The largest manufacturer of cotton ginning machinery in the world began its work in Alabama 136 years ago in the town of Prattville. One of the state's largest textile mills is this year celebrating its 100th anniversary.

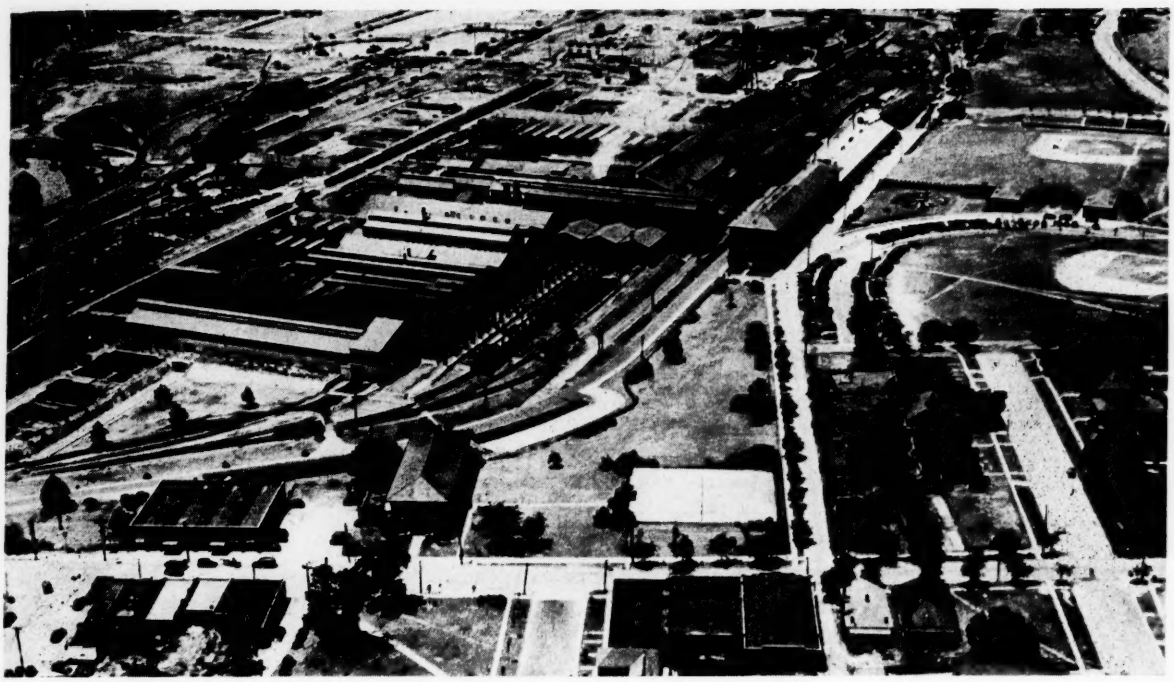
Concentration of the iron and steel industry in the Birmingham district, which has made of this section of Alabama a great industrial center, has been due to the availability and close proximity to the furnaces of the necessary coal and ore and other ingredients that enter into the manufacture of iron and steel.

Birmingham—Alabama's center of the Iron and Steel Industry



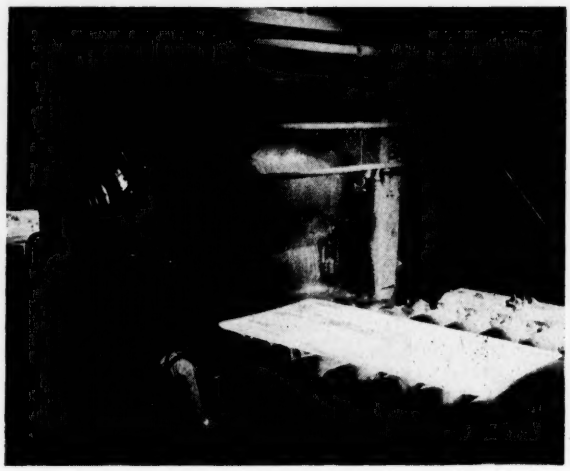
Iron Pipe Ready for Shipment

One of Alabama's Large Mills



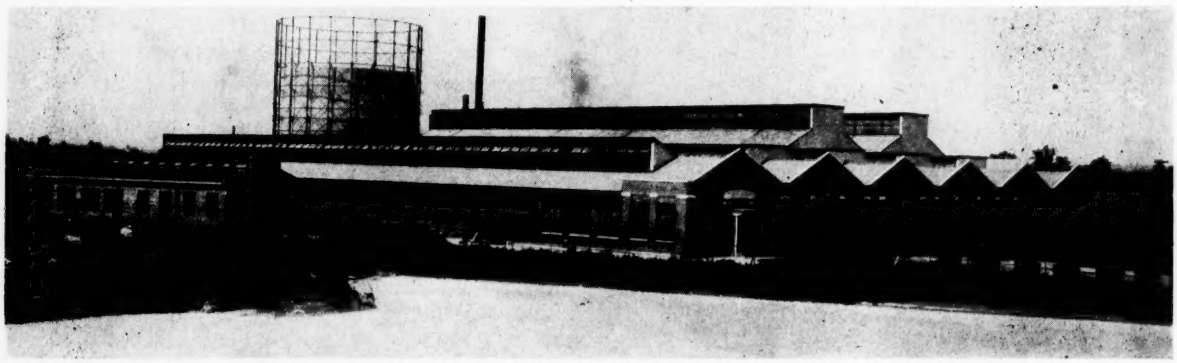
An Aerial View of an Industrial Community

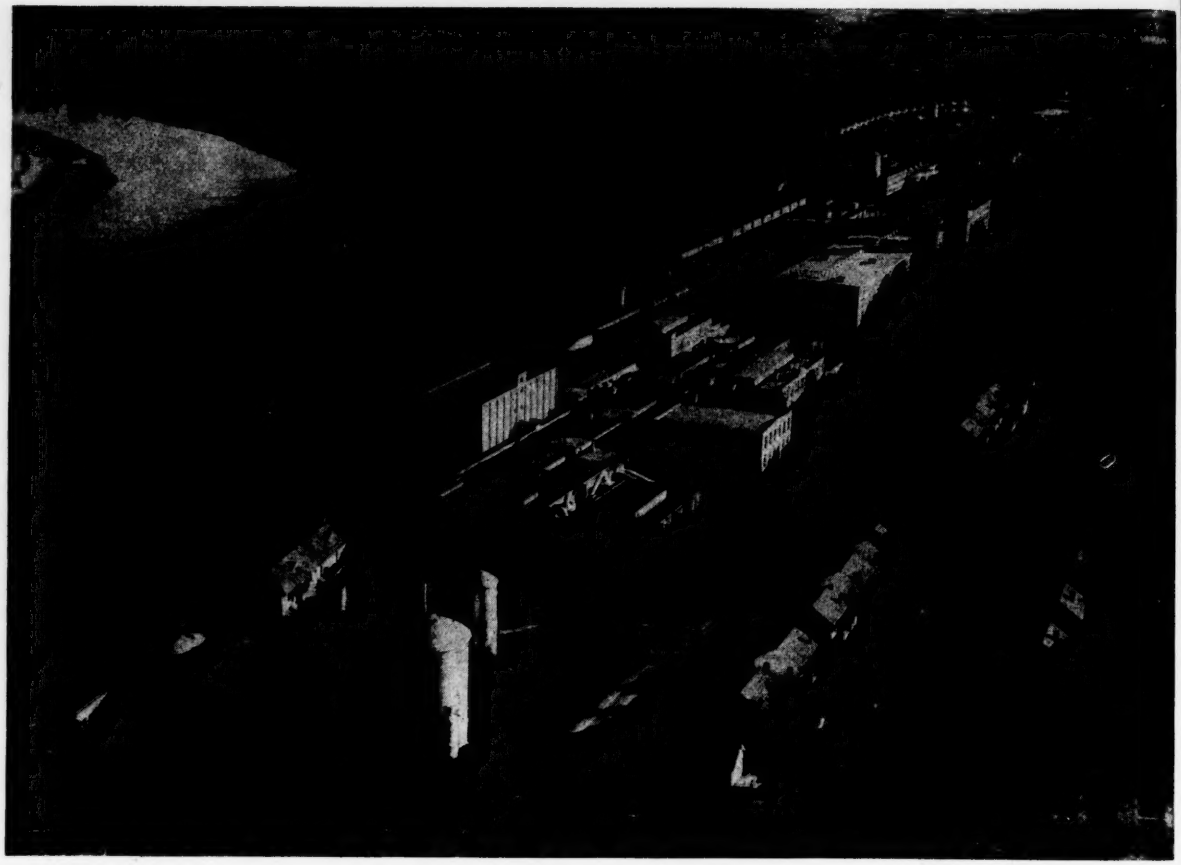
Sheets of Steel Roll Out of these Presses on a Round-the-Clock Schedule



Stacking and Storing Finished Sheets

Plant Specializing in the Manufacture of Bolts and Nuts





One of the Largest Bleaching and Dye Plants in the Country

Iron and Steel

It has been said many times with reference to America's progress—"as iron and steel goes, so goes the country's prosperity." Whether literally correct or not, it is undoubtedly true that the prosperity of the iron and steel industry is a large factor in America's advance. Alabama is fortunate in having within its borders in the Birmingham District one of the great iron and steel centers of the United States. The reason for the concentration of this important industry in this locality is referred to further on.

The making of iron is one of the oldest industries in Alabama. The first blast furnace in the state was erected in 1815, four years before Alabama was admitted to the Union. At the commencement of the War-between-the-States there were six, or perhaps seven, operating blast furnaces, and between 1862 and 1865 thirteen additional furnaces were built.

The modern era in this important industry began in 1880 with the establishment of two coke furnaces. These were the result of opening important coal fields in what is now the Birmingham area. The first steel was produced there in 1899, and from these beginnings there developed the great iron and steel industry of Alabama which is known over the world. In this area are found coal, iron ore and limestone in vast quantities (within a radius of 8 miles). The presence of these basic requisites which are so vital as a foundation stone in the building of any state, or even a nation, has provided a natural advantage to the rapid growth and development of industry generally.

Today the iron and steel industry includes not only modern blast furnaces, but giant rail mills, mills for making plates, bars and small shapes, by-product coke plants, wire mills, open hearth furnaces, rolling mills, cotton tie and hook mills, sheet mills and large tin plate mills.

The Birmingham, Bessemer and Gadsden district constitutes one of the major iron and steel-producing sections of the country, and as it has expanded other corollary industries have been started and grown into great enterprises. Among these are structural steel and fabricating plants, manufactures of special machinery and castings, as well as stoves and railroad cars and a variety of goods.

One of the large developments has been in the making of cast iron pipe and pipe fittings. Alabama leads the nation in the production of cast iron pipe. There is made here one-half of the total output of the country. This industry is concentrated in the Anniston and Birmingham areas.

Here also electric furnaces are producing alloys and recent advancements have been followed in the fields of welding. There is a rapidly accelerated movement into the production of more finished products

which are demanded and consumed in the South. With a world of raw materials to draw upon, the outlook is for an increasing production of farm implements and farm machinery, automobile parts and the making of machine equipment which is in demand throughout the South, as well as heavy industrial machines needed in South America, together with lines of consumer goods.

New methods developed in the pig iron industry as a result of research have disproven the theory that high-grade castings cannot be made from Southern iron because of high phosphorus content. The manufacture of gray iron castings in many lines not heretofore made in the South will follow in the postwar period. Experience in new fields of manufacture and in mass production, brought about in the steel and iron industry as a result of the war, has given to management and to labor "know-how" and skill which should expand the industry into many new fields.

Textiles

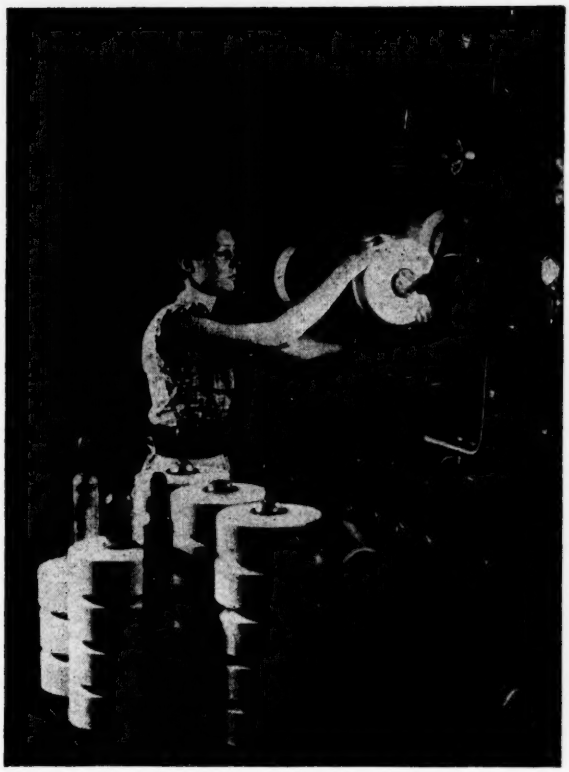
The manufacture of textiles is one of the major industries of Alabama. The first textile mill in the state was the Bell Factory which was established in Madison County in 1832. A mill which was chartered at Tallassee in 1841 began actual operations in 1844 and this year marks its 100th year of continuous operation.

Another mill now a part of Alabama's textile industry is the oldest in the country in point of continuous operation. It was chartered in 1814 and moved to Alabama from Massachusetts in 1927.

First developments in the textile field in Alabama were spinning and weaving mills, but there has been an increase in the manufacture of finished goods until now there are more than 125 units operating in the state with products of various kinds valued in excess of $135,000,000 annually. Knitting mills, hosiery mills, garment plants and one of the largest bleachery and dye works in the country have found satisfactory and profitable operating conditions here.

There is every indication that the future will see more finishing plants to handle the fabrics now made. The establishment of these plants, due to the availability of labor and power, will bring to the state an increasing number of needlework and fabricating plants to supplement present profitable operations in this field. Textile industries now located in the state are manufacturing underwear, athletic goods, full-fashioned hosiery, dress and work shirts for men, work clothing, towels, uniforms and the highest quality ladies' gowns and lingerie. Smaller towns of the state have proven excellent locations for the needlework and fabricating industries. Labor is drawn from the surrounding areas, in many cases, and consists largely of high school graduates who quickly attain a high degree of productivity. The greatest development in textile production in the postwar period will likely be in the needlework and fabricating field.

These plants in Alabama have made a tremendous contribution to the war effort.



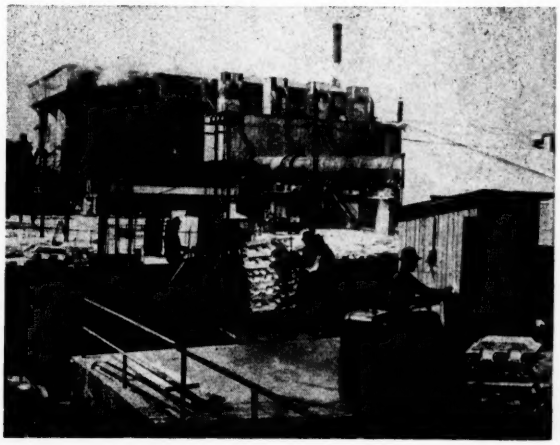
Women Operators Play Their Part

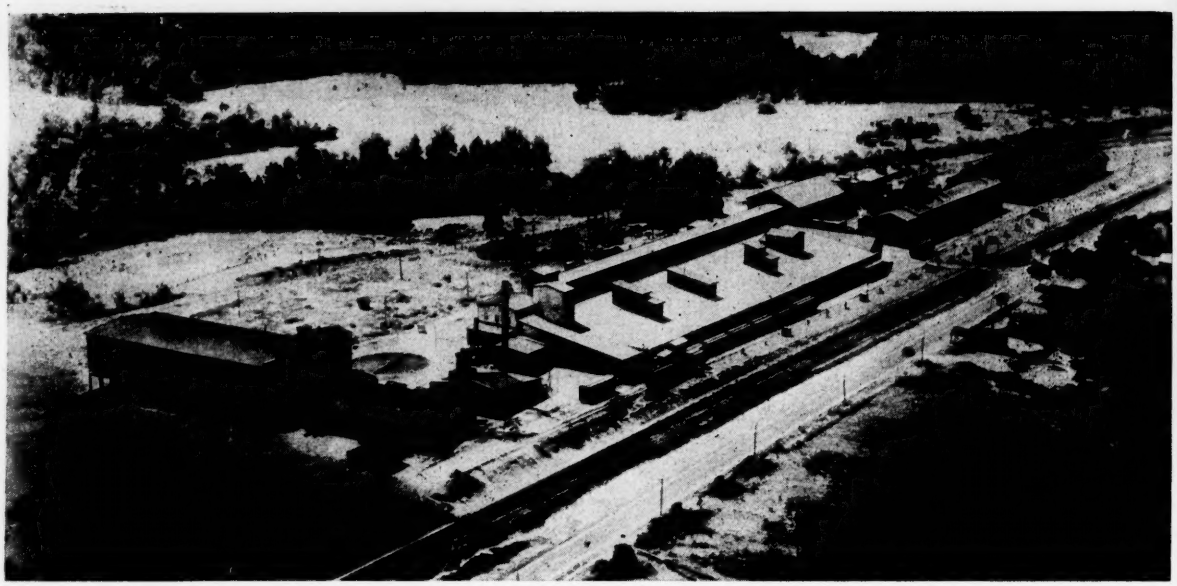
Chemical Industry

Perhaps in no field of enterprise has there been such rapid growth in recent years as that shown by the chemical industry. It has expanded greatly and rapidly to meet war needs, but thanks to scientific research, its products in the main are such as to meet the needs of the time of peace. Its work creates new wealth and goes much further than the making of "two blades of grass where there was but one." Its valuable output comes oftentimes from material that previously was classed as waste.

Thanks to chemistry the farm is no longer to be regarded as a source of food alone. It has opened a gate

Loading Aluminum Bars





Fertilizer Plant

of the industrial arena to the farmer which is destined to broaden greatly the economic outlook of those who till the soil.

Chemistry has become a major factor in the increasing wealth of Alabama. Its future is bounded only by the imagination of chemical genius. Plants already here are producing explosives, acids, ammonia, abrasives, carbide and dry ice, besides disinfectants, insecticides, creosote and other wood preserving material. Research in coal has resulted in the creation of plants manufacturing coal tar, road building material, waterproofing material, and from the state's coke ovens come benzene, toluene, naphthalene and xylene.

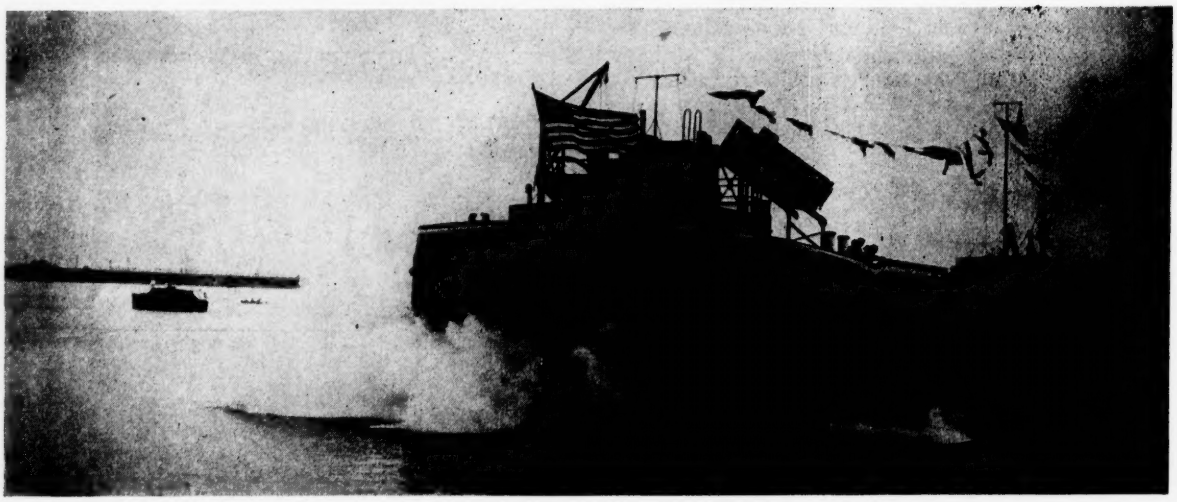
The production of vegetable oils is a growing enterprise. A large plant manufactures synthetic resin, and there are two important chemical warfare plants.

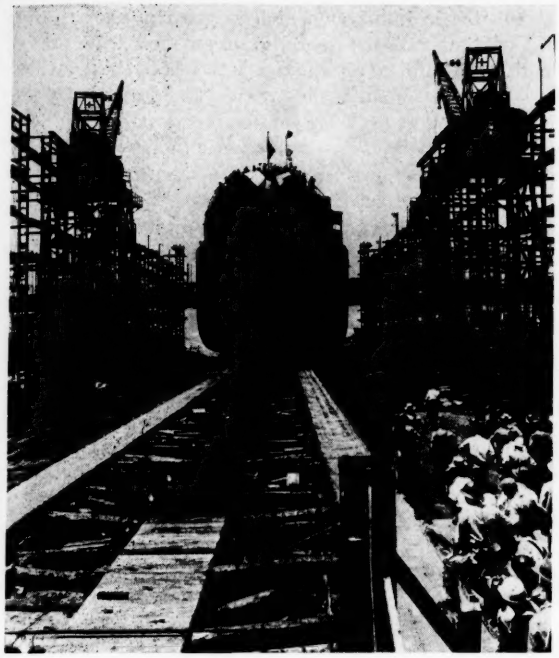
The refinement of aluminum depends upon chemical processes, and it is worthy of note that there is more aluminum produced in the state today than was produced in the entire nation prior to the war. Alabama bauxite is used largely in this work. One of the aluminum plants in Alabama has the only operation in the country where the entire process from the ore to the finished aluminum product is carried on in one plant.

Upon the basis of what already has been done, coupled with the raw materials that are in abundance, the future of the chemical industry here seems almost unlimited. The opportunities for new enterprise are many and varied. Plastics which cover such a wide range, magnesium, synthetic petroleum, alkalis, and other needed chemical products will find in the state conditions suitable to profitable undertakings.

Among the industries in the field of chemurgy which

Sideway Launching of a Cargo Barge on the Tennessee River





A Tanker Slides Down the Ways at Mobile

loom large in the future of Alabama are plants manufacturing alcohol from starch and sugar crops. Those manufacturing starch from sweet potatoes, as well as additional pulp and paper mills, wood plastic plants and tung oil should do well.

Manufacturers of rayon, nylon and cellulose, and other synthetic fibers will find suitable locations and abundant supplies of the necessary raw material.

Shipbuilding

This state's part in America's shipbuilding program to supply the war needs of ourselves and our allies has been an important one.

Expanded plant capacity to meet increased demand was quickly provided, and the constant launching of fighting, merchant vessels and auxiliary craft has justified the praise of authorities for the promptness with which the need for ships and more ships has been met.

Alabama's coast line on the Gulf and her navigable rivers have proven their availability for this major effort. Here again is the peace-time opportunity of a sustained important industry to facilitate the supplying of domestic needs and foreign trade. Nearness to South America, offering as it will attractive markets for our producers, is an obvious advantage which the ports of the state will improve.

Of these, Mobile, with its extensive shipyards and huge dry dock, is one of the country's important ports. Shippers of the North and central West will find here modern facilities of the most approved type for handling incoming and outgoing freight.

Two important shipbuilding operations on the Tennessee River are turning out landing barges and various types of river and ocean-going craft.

The resources of Alabama lend themselves to the success of such enterprises. Her naval stores, iron and steel and lumber, together with a reservoir of skilled labor all are available.

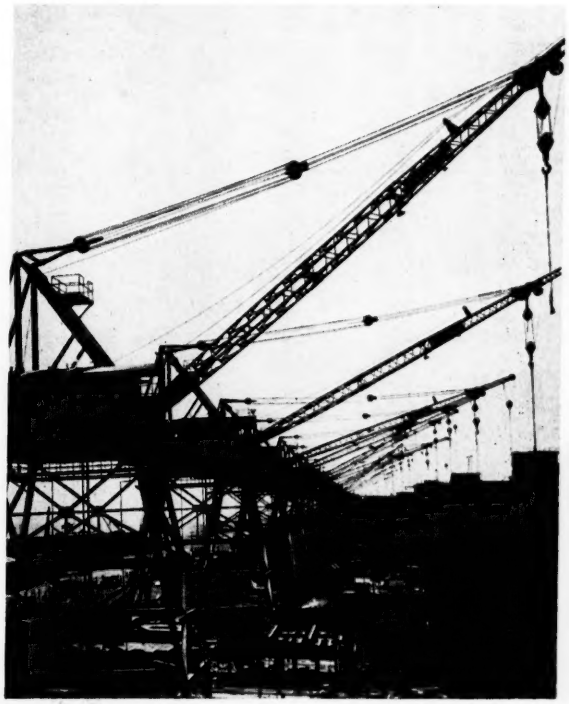
Forest Products Industries

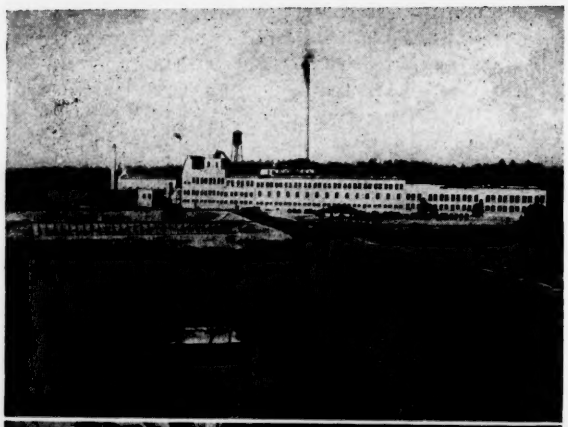
Alabama ranks third among the states of the Union in the production of lumber, exceeded only by Washington and Oregon. Her forest products industries operate in many lines. These are not only diversified, but are giving more and more attention to finished products. They give full time employment to approximately 100,000 people, and the number of plants is steadily increasing.

There are now in this state 2,500 sawmills, five pulp and paper mills, and 133 other wood-using plants. These manufacture furniture, cabinets, sash and doors, prefabricated houses, veneer, composition boards, excelsior, cooperage, paper, and other products.

Both Kraft and white paper at the present time is being made from Alabama pine. A variety of woods growing in the state are adapted to the manufacture of furniture and veneers, and with the importation of other veneers from Mexico and South America through the Port of Mobile, exceptional opportunities are provided for the manufacture of many finished wood products for the consumer market. Many of Alabama's smaller woodworking plants, as the result of war orders and increased plant capacity, have developed new techniques in assembly lines turning out the best grade of wood products.

Shipbuilding Needs Powerful Equipment





Above: A Woodworking Plant. Below: Making Church Pews

The plastic industry which is growing so rapidly and evidently is destined for expansion into many fields, will find in abundance wood fibers and other forest products available here that are necessary to their operation.

At the risk of repetition it is fair to say that in the invitation and opportunity which Alabama extends to industry of various kinds, her timber resources and other advantages definitely provide an attractive outlook to those considering a location change or the establishment of a new enterprise.

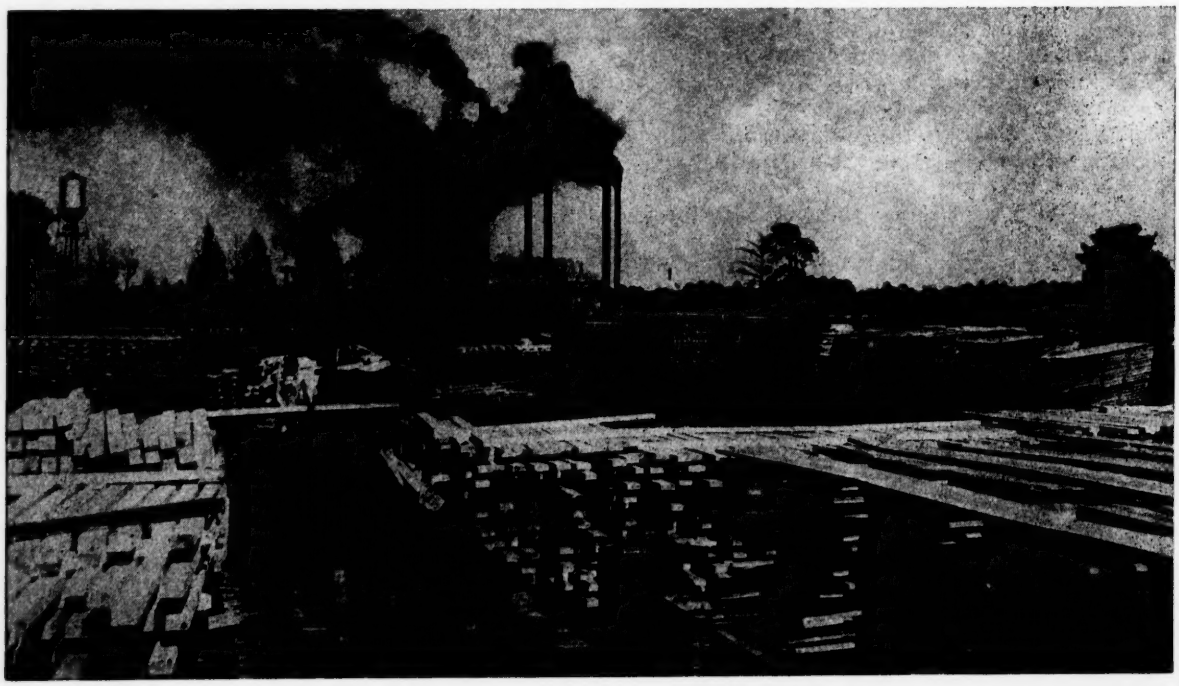
Food Products Industries

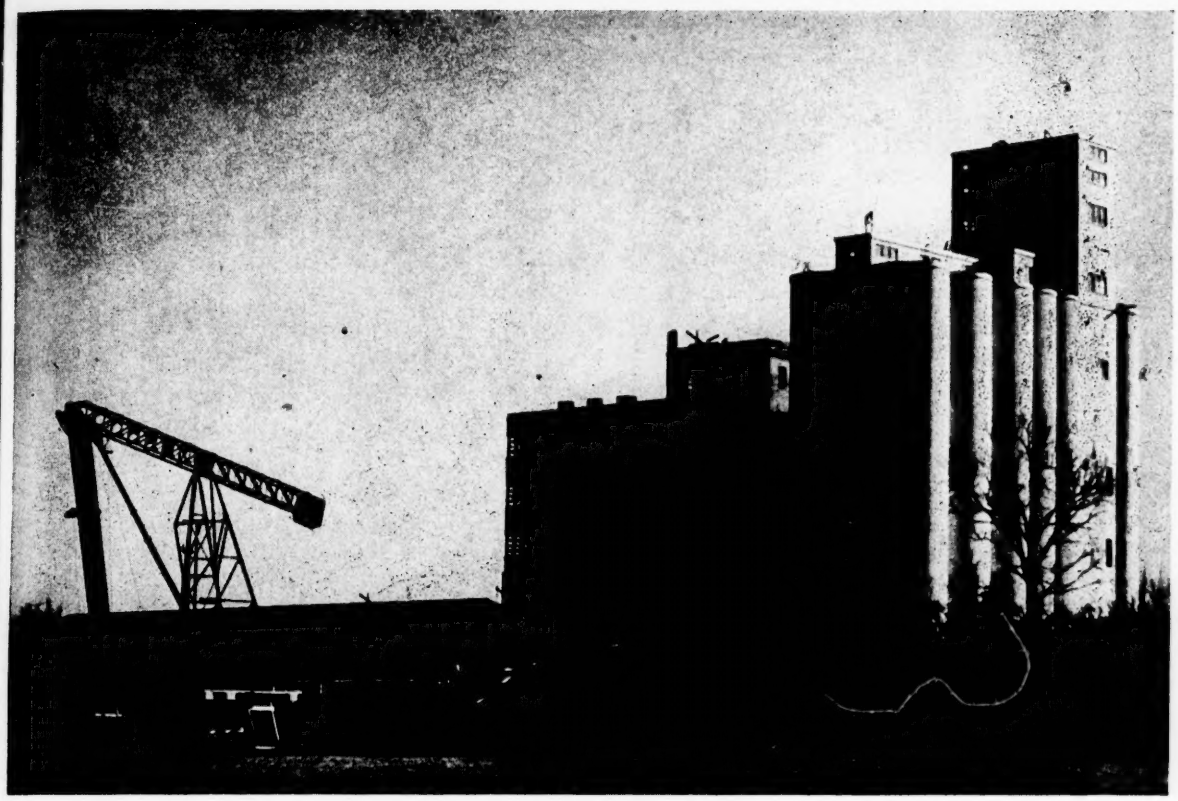
The expansion of food products industries throughout the South is a natural development in an area so advantageously situated for the raising of food supplies. The general outlook for food processing is very bright, and that is especially true of this state.

There are already located in Alabama a number of meat-packing plants, canning plants, cheese plants, milk condenseries and plants for the making of butter, ice cream, pickling and preserving, syrup, egg-drying, commercial freezing, dehydration and others. It is natural to look for the extension of these in number and variety because of the climate and soil which provide unexcelled conditions for the growth of livestock and crops.

Alabama has a long growing season, and this fact, with the encouraging development of her dairy industry, are basic reasons for the success of private enterprise in processing farm crops and livestock. It is not to be doubted that food products industries will grow in the future far beyond anything heretofore. There is every reason why they should.

Lumber for the State and Nation



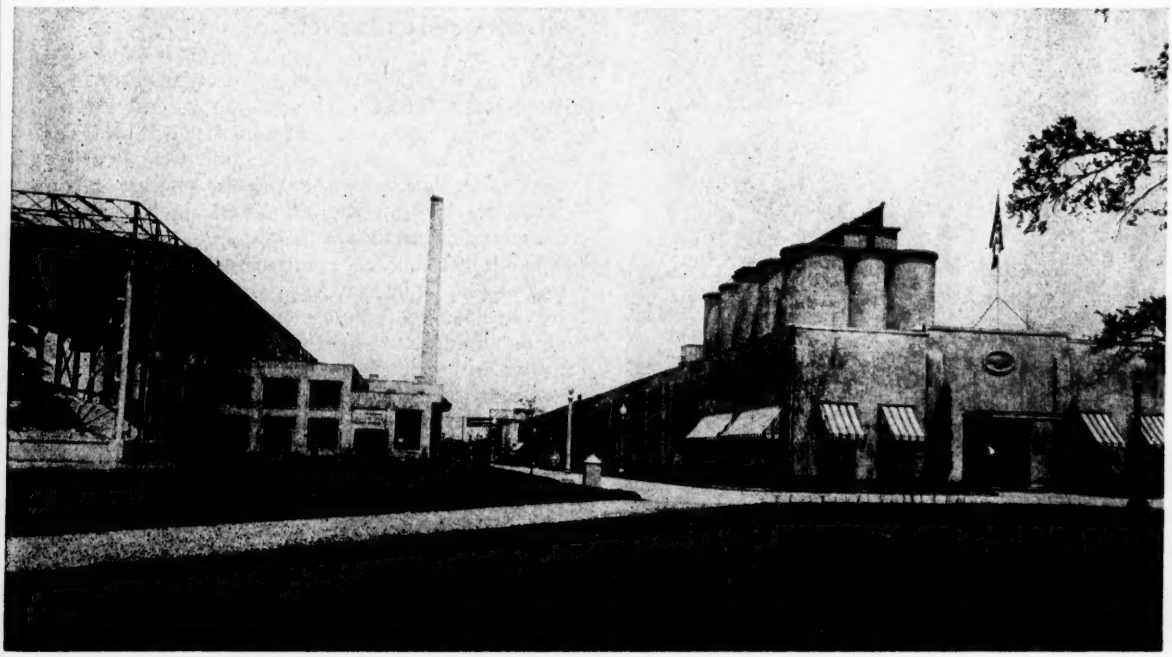


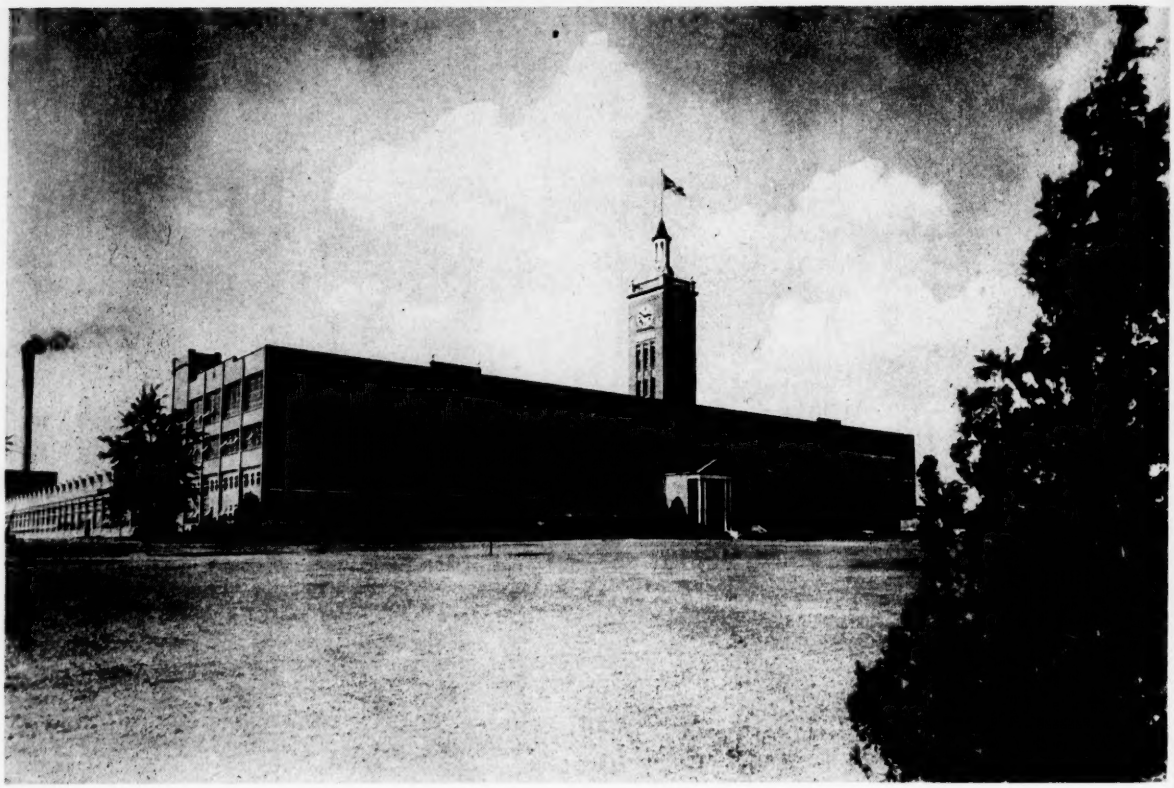
Where Grain is Converted into Flour

Stone, Cement, Lime, & Kindred Products

Alabama is an important producer of building stone, marble, cement, lime, brick and tile, refractory shapes and other products. The largest deposits of white marble in the world are in the Eastern part of the state, and the fame of Alabama marble has spread throughout the country where it is extensively used in construction and decorative work.

Modern Cement Plant





Plants Like the Above are Typical

The clays found within the borders of this commonwealth are admirably adapted for the ceramics industry, and there are numerous deposits of silica suitable for the manufacture of glass and glassware of the best grades. The possibilities for further expansion in these various fields is noteworthy.

The resources as well as labor are abundant, and these advantages, together with ample transportation facilities and power, make certain the definite growth of enterprises so essential to every day needs.

Aircraft Modification

Miscellaneous Industry

There is a wide diversification of industry in Alabama today. In addition to those general classifications, which have been mentioned, substantial enterprises include making automobile tires, truck and bus bodies, mattresses and springs, concrete and other products. An important undertaking is engaged in the manufacture of livestock and poultry feeds.

The latest U. S. census figures (1942) give a valuation of $15,122,000 to the products made in Alabama from cottonseed. Numerous plants throughout the state manufacture cottonseed meal, oil, hulls and linters, all of which find many uses in the agricultural and industrial life of the state and nation. Such products supply the needs of other manufacturers and consumer markets, besides adding materially to the annual revenue of farmers.

The state's industrial development has proceeded along sound lines. The attitude of state government has been friendly and a keen, active interest has been expressed in the welfare of existing enterprises and in the acquisition of new industries by the state and by counties and municipalities.

In the matter of taxes, the state has pursued a reasonable and farsighted policy. An efficient Department of Industrial Relations is maintained and also a Labor Department. An Unemployment Compensation law contains an experience rating plan. There has been relative freedom from industrial disturbances and misunderstandings in the relations between employer and employee. With varied natural resources and adequate labor supply, ample power and fuels, excellent transportation facilities, a sound and forward-looking government, and steadily increasing purchasing power, Alabama is laying plans now to launch into a new period of industrial development and expansion when her industries are able to convert to the production of peacetime and civilian goods.

The extension of industrial establishments into rural and agricultural sections is noteworthy. They are supplementing farm incomes with industrial payrolls. Science is doing its part in changing the waste products of the farm into new and necessary manufactured articles of wide appeal.

These new industrial developments will bring about a better balance between agriculture and industry. They are not being sought at the expense of other sections but Alabama is seeking industry that will process her raw materials, the products of her farms, forests and mines into consumer goods primarily for her own markets. The state has no resources, material or human, for exploitation. It is offering no unsound inducements or considerations and is seeking only industry that will assume its full share of community and state responsibility and whose operations will be profitable. The state recognizes that only enterprises founded on sound basic principles and scientific research make for enduring progress.

Scientific Research

Further evidence that Alabama is fully abreast of the times in her thinking and planning is found in the interest being manifested in scientific research by the state's business and industrial leaders. To crystallize this interest and to bring about the widest possible use for resources and raw materials available, a state-wide movement looking toward the establishment of a great research institute was begun several years ago by the State Chamber of Commerce. As a result, the Alabama Research Institute was organized, and more than $360,000 was raised within the state by private subscription for its support.

The one thought back of its establishment is that Alabama shall, through scientific research, provide the means through which its resources may be profitably utilized for the increasing new wealth and added well-being of the people of the state.

Spurred on by the progress being made in Alabama, other Southern states have expressed increasing interest in the results obtained from properly directed research, and at the request of leaders of other states the name of the institute has been changed from the Alabama Research Institute to the Southern Research Institute. Its financial basis and program of work have been broadened to include other Southern states.

Modern Drift Mouth

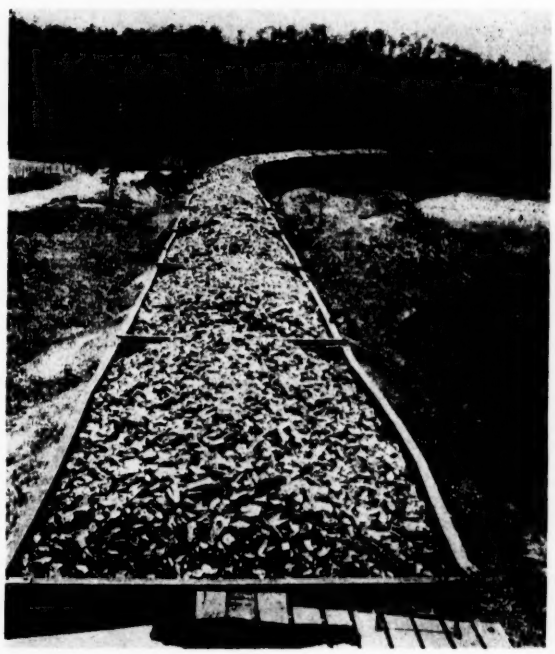
—MINERALS

The mineral resources of the state constitute a source of great wealth and are a basis for large and important new developments. Among the 31 minerals occurring in Alabama in quantities sufficient for commercial utilization, there are vast deposits of coal and iron, two minerals which consistently have determined industrial progress throughout the world. Alabama's coal and iron deposits alone are great enough to place her mineral industry on a sound basis for centuries to come. No mineral district in the country has a more certain future than that of the Birmingham district.

Coal

Alabama has a major coal field (Warrior) which lies west of Birmingham and covers an area of 4,000

Prepared Coal On Its Way to Consumer



Coal as the Miners See It

square miles, containing probably 60,000,000,000 tons of usable bituminous coal. The Cahaba field has an area of 360 square miles and a reserve of 10,000,000,000 tons. Coosa field, Southeast of Cahaba, has perhaps a 1,000,000,000 ton reserve. Other scattered seams give a total reserve of at least 75,000,000,000 tons.

Coal mining in Alabama long has been an important industry. Commercial production in 1940 was 15,464,523 tons. It is used not only for heating purposes, but for the production of power, and for making coke and by-products. One of the inevitable future uses of coal is in the manufacture of synthetic petroleum. An important Alabama seam, the Black Creek, has been shown in preliminary tests to be highly productive in gasoline. There is every reason to believe that the strictly chemical uses of coal, not necessarily through coking, will increase rapidly after the war and open up many new fields of important development.

Iron Ore

Two kinds of iron ore are mined in Alabama and a third may come into production later. These are red ore, brown ore and gray ore.

Red Ore

Red ore production in 1941 was 8,678,435 tons. Red ore occurrence is in a strip of country 25 miles long lying to the southeast of the Birmingham and Bessemer district. Other occurrences are scattered to the northeast. Reserves of red ore are estimated at more than two billion tons.

Brown Ore

Brown ore is found throughout the state and is generally mined by open cut methods. The reserves of brown ore are estimated at more than 75 million tons. Production of brown ore in 1941 was 3,775,851 tons. Due to the war, this production was stepped up to more than seven million tons in 1942.

Gray Ore

Gray ore is not commercially mined at present, but investigations and drillings are being made to determine its future value and use.

Flake Graphite

Probably the largest deposit of flake graphite in the United States is found in a 35-mile strip in Clay, Chilton and Coosa Counties. Reserves are estimated

at 80 million tons of graphite rock from which 2% (1,600,000 tons) of graphite can be recovered. In addition, there are large amounts of unweathered "blue rock" graphite not at present usable. Thus far, the commercial production of graphite has been confined largely to periods of National emergency. The present uses are for crucibles, lubricants, foundry castings, and so forth.

Clay and Shale

Clay and shale for brickmaking are scattered throughout the state. Fire clays are found underlying some of the coal seams, especially in the Warrior basin. There are deposits of "primary" clays in East Alabama suitable for high grade pottery use. Shale is extensively quarried for use in the Portland cement plants of the state.

Sand and Gravel

Sand and gravel deposits are common throughout the state. Some material is dredged from rivers and larger quantities mined in many localities. In 1942, 4,659,624 short tons were produced. Molding sand is obtained in several localities in proximity to the foundry industries of Birmingham, Gadsden and Anniston districts. Tonnage of molding sand in 1942 was 105,371 tons. Deposits of "glass" sand exist in quantity in Baldwin County near the Gulf Coast and in Calhoun County in northeast Alabama. These sands, by tests, are of highest grade and suitable for the manufacture of all glass products, including plate glass and optical glass.

Stone

From Alabama quarries there are produced annually more than 3,141,000 tons of stone. Much of this is in the form of crushed dolomite and limestone, of which nearly 2,000,000 tons are used annually as "flux." Ornamental limestone is extensively quarried, and in the making of lime there has been created a substantial industry in central Alabama and in localities in the North.

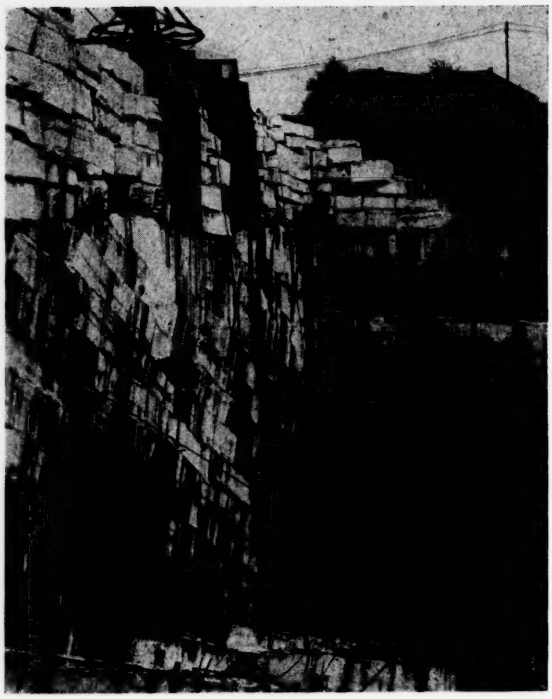
Sandstone occurs widely throughout the Northern counties. Alabama marble is widely used for building and ornamental purposes, and near Sylacauga, where it is quarried on a large scale, it is claimed there is the world's largest vein of white marble.

The Ketona dolomite is very pure and is admirably suited to the manufacture of magnesium. The presence of this material presages important development of the magnesium industry.

Bauxite

Bauxite, the only commercial source of aluminum, occurs in southeast, northeast and northwest Alabama. Some of these deposits are good grade and are now under active development, making a substantial contribution to the aluminum industry which has developed here. These bauxite deposits also have a value in supplying raw material for alum (aluminum sulphate) much used in textile work, water purification and in paper manufacture.

Where Coal is Cleaned, Sorted, and Graded



Alabama Marble

Quartzite (Ganister)

Quartzite is quarried in Cherokee County for silica brick manufacture in the Bessemer district.

Rock Asphalt

Rock asphalt occurs as asphaltic sandstone and asphaltic limestone in north Alabama.

Other minerals occurring in quantity and quality, which indicate possible future commercial development, are bentonite, talc, asbestos, tin, barite, mica, salt, and possibly gold.

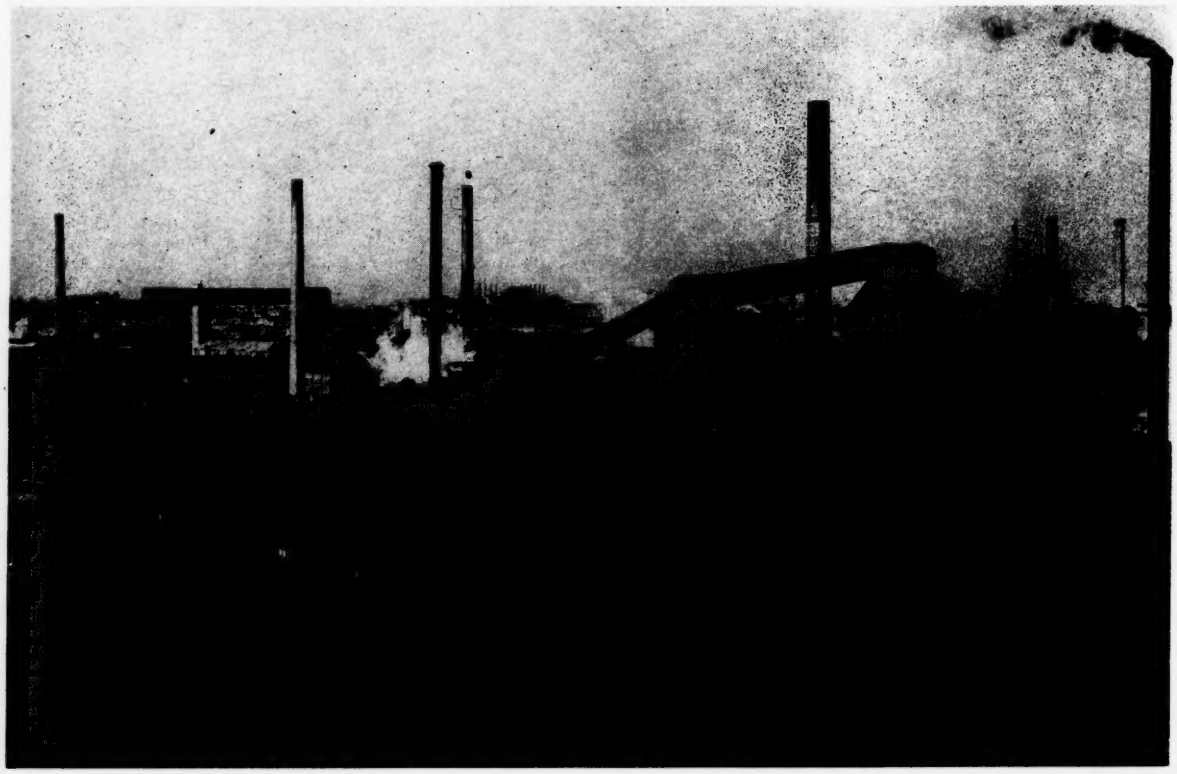
Oil and Gas

Five small oil wells are now producing in Choctaw County. These wells have been brought into production in the last six months. While their production is small, geologists feel that there is every reason to believe that one or more major-producing fields may be found in southwest Alabama.

Water

Alabama's surface and underground waters are among the most important mineral resources of the state. The large lakes in north and central Alabama created by power dams on the Tennessee, Coosa and Tallapoosa Rivers are important sources of industrial water supply. The many rivers and streams of the state place an adequate supply of industrial water within reach of plants locating in almost any section of Alabama. The Birmingham district, in recent years, has developed its own industrial water supply, which furnishes to this district the one great resource which it was lacking for its future industrial development. Alabama is fortunate in having an abundant supply of ground water of good quality (soft). This water is of low temperature and will be of increasing value to many future industries.

Coke is the Industrial Partner of Iron and Steel



—AGRICULTURE

Since the early Indians found this goodly land and cleared the thickets and planted seed, agriculture has been of prime importance. Normally it provides direct employment for about half of the state's population. Approximately seventy percent of the people of the state are dependent either directly or indirectly on agriculture for a livelihood.

For a long time Alabama had a farm economy based largely on cotton but in recent years attention has been concentrated upon diversified agriculture with the raising of livestock becoming of increasing importance. The state's remarkable progress in Agriculture has been based largely upon the sound principles of wise land use by scientific and proper treatment of soils. As a result the per acre yield of practically all crops has been substantially increased. Marked progress is being made in combating soil erosion through a widespread program of terracing and contour plowing, cover crops and winter legumes. Mild climate and ample rainfall give an unusually long growing season throughout the state.

Total cash income from farms in 1943 was $244,892,000. Government payments were $10,448,000 and value of products consumed on farms where produced was estimated at $75,000,000, giving a total value from farm operations for the year of $330,340,000. Of the total cash income of $244,892,000, livestock and livestock products accounted for $69,424,000 against $15,064,000 in 1933. Thus in ten years the cash income from livestock and livestock products increased more than four and one-half times.

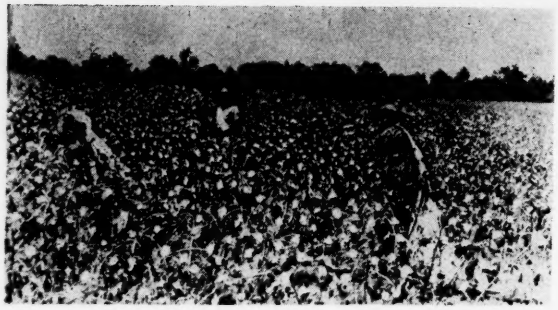
In acreage devoted to crops, corn ranks first, followed by cotton, hay, peanuts and oats in the order named.

On the basis of cash income from crops, cotton easily ranks first, followed by peanuts, truck crops and fruits, cottonseed, corn, hay and oats.

Cotton. While acreage devoted to cotton has decreased, the quality of cotton produced has steadily improved and the yield per acre has increased. In 1943, Alabama farmers planted 1,627,000 acres in cotton that produced an average of 283 pounds per acre. This cotton was valued at $72,000,000.

Corn. The acreage devoted to corn is high but yield per acre in Alabama is generally low. However, the average yield per acre has increased from twelve bushels in 1940 to fifteen bushels in 1943. This increased yield per acre increased total production in spite of a reduced acreage. Agricultural forces are

Top: Picking Beans. Note the Circular Method of Crop Planting. Center: A Peanut Farm. Bottom. Cabbages—Note Size of Heads



Picking Cotton

working to bring the average yield up to twenty bushels per acre.

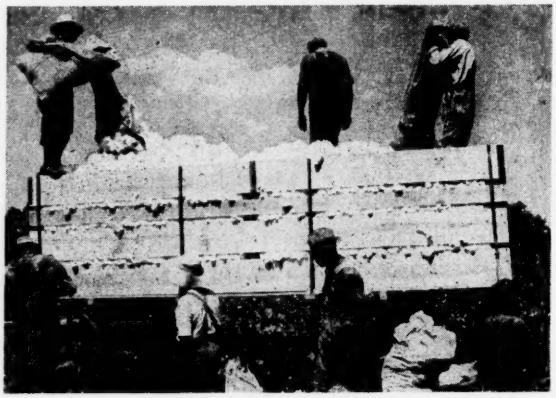
Peanuts. Alabama has achieved an enormous increase in the production of peanuts both in total acreage and the acreage picked and threshed. In 1943 farmers of the state planted a total of 812,000 acres with 645,000 acres harvested for nuts. These nuts brought $35,500,000. In 1940 the total acreage was 540,000 and 310,000 acres were harvested for nuts. The value of these peanuts picked and threshed in 1940 was $6,800,000. The value of the 1943 peanut crop was nearly six times that of the 1940 crop. In eleven Southeastern Alabama counties, peanuts have become a major crop.

Hay and Oats. The production of hay and oats has increased steadily as the livestock industry of the state has developed. Alabama farmers are producing more feed crops and marketing these crops through livestock with increasing profits.

Truck Crops and Fruits. In the past, fruits and vegetables were produced chiefly for home use but development is now on a commercial basis, in such crops as strawberries, watermelons, peaches, cucumbers and cabbage. Irish potatoes have become a major crop in several counties. Baldwin County alone ships around 7,000 cars of Irish potatoes each year. Sweet potatoes offer at present opportunities for increased commercial production.

Improved varieties and greater emphasis on grading and packing and marketing are bringing increased returns to the state for its fruits and vegetables. The State Markets Board of the Department of Agriculture is now developing a system of area markets.

Loading Cotton in the Fields



Livestock. Most striking of the new agricultural developments is the livestock industry. Greatest progress has been made in beef cattle production. In January, 1944, there were 1,255,000 head of cattle in the state, the largest number on record. Not only has the number of cattle increased rapidly but even greater improvement has been made in the quality.

Cattle production, particularly for beef, has developed most rapidly in areas where large acreages of pasture land and forage crops are grown, such as the Black Belt, the Tennessee Valley and Southwest Alabama. Many purebred herds are found in the state. Indicative of this progress is the fact that Montgomery has become one of the largest markets in the South and the stockyards of that city handle annually livestock to the value of approximately $12,000,000.

Dairying has made rapid strides in the past few years. Not only has the number of dairy cattle increased but Alabama pastures have many well-bred and selected herds of Jerseys, Guernseys and Holstein-Fresians. Milk production has been increased as part of the war effort. Alabama's increase in percentage surpassed other Southeastern States.

Hogs. In 1943, a new all-time record was achieved in hog production. As of January 1, 1943, there were 1,064,000 head of hogs in the state and they were valued at $17,900,000, an increase of two and one-half times over the previous ten-year average. Here also there has been marked improvement in quality as well as quantity.

The excellent work in the development of permanent pastures and increased production of feed and forage crops have been important contributing factors to the phenomenal growth of the livestock industry.

Poultry and Eggs. The average number of chickens raised on Alabama farms during the period of 1937 through 1941 was 12,137,000 head as compared with 16,665,000 in 1943. In 1943, 64,700,000 dozen eggs were produced, as compared with 42,250,000 dozen in 1941. The raising of turkeys is increasing, especially in Central Alabama.

Bees. Alabama leads the Nation in the shipment of live bees and queens. Each year thousands of package bees and queens are shipped from the state to every section of the United States and Canada. Alabama queen breeders have a continent-wide reputation and an exceptional queen has sold for as much as $500.00. The shipping of live bees is more profitable in Alabama than the production of honey.

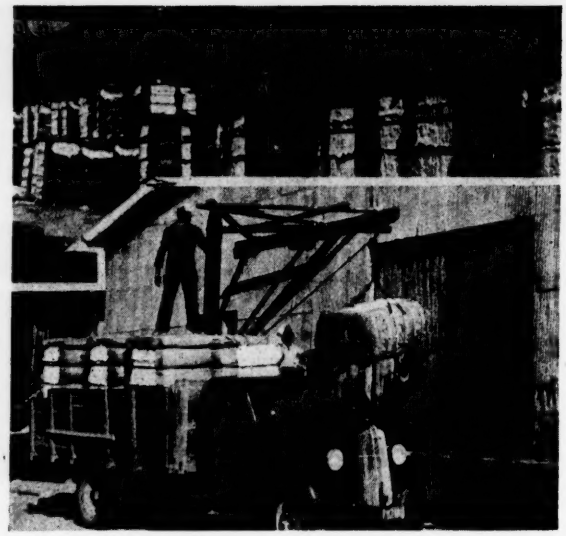
Specialties. Agriculture is not only progressing in the fields of major crops and livestock, but the state has developed a number of specialties. The second to the largest wholesale nursery in the United States is at Chase, Alabama, near Huntsville. One of the largest commercial productions of water cress in the country is in Madison County near Jefferson. The

Top: Modern Livestock Farm

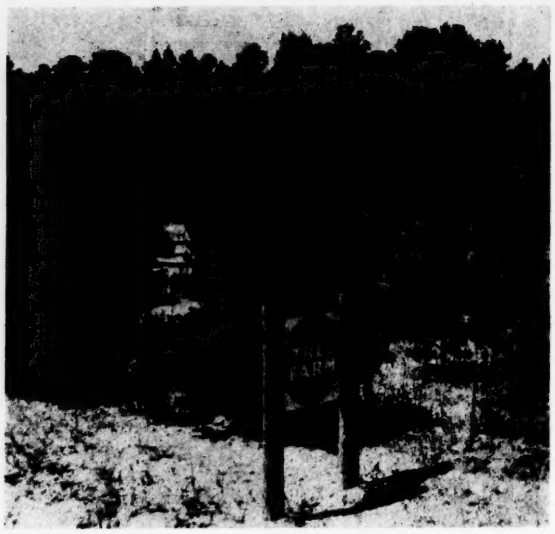
Center Left: Fresh Pasture Land

Center Right: 4H Club's Fat Calf Show

Bottom: Cows in Clover



Cotton Baled and Ready for Shipment



Tree Farms Like This Dot the State

growing and shipping of gladioli and peonies is on a commercial basis in several localities. The growing of Alabama's famed Azaleas and Camelia Japonicas in Baldwin and Mobile Counties is another of the state's specialties.

There is definite and healthy progress on Alabama farms. Farmers are making better use of the land. The Alabama farmer is conservation conscious. He is rapidly learning that efficient use of land requires efficient use of labor, equipment, capital and livestock, and that full utilization of labor means adequate balance or, in other words, diversification on farms.

Many of the changes made in response to the war effort are exactly the type of changes needed as the basis for an enduringly profitable agriculture. Agricultural authorities are now pointing the way toward continuation of these practices which will contribute to a stabilized and permanent agriculture. They are basing their efforts upon the results of proven experiments. Agricultural leaders, having done a good job on production in recent years, are now directing their attention to problems of distribution such as the practice of better methods of assembling, packaging, grading and shipping.

An important development in the agricultural life of the state, and one which is adding much to improved living conditions of the farm population, is the building of quick-freezing locker plants in the smaller towns and rural areas. Alabama has 26 of these plants which are being successfully operated at the present time where the farmer's products are frozen and stored in his own locker. A recent survey indicates that at least 75 more of these plants are needed and will be constructed in the post-war period when materials are available.

Agriculture today offers real opportunities in many fields and Alabama is taking its place as a progressive and modern farm state.

— FORESTS

The forests of Alabama constitute one of its greatest assets. As previously stated, these forests are now supporting 2,500 saw mills, five paper and pulp mills and 133 other wood using industries, thus giving gainful employment to 100,000 people.

A greater part of the state's area was once covered with timber. The needs of a growing population and an expanding agriculture has reduced the area of forest growth to approximately 19,000,000 acres. It appears now that little change in the gross area of woodland will take place in the future. While some lands may be cleared, other lands of marginal character heretofore cultivated are being returned to forest growth.

In 1942 the lumber cut was 1,736,450,000 board feet of soft woods and 373,299,000 board feet of hardwoods.

The principal soft woods species are longleaf, shortleaf, loblolly and virgin pine, cypress, red cedar and hemlock. Hardwoods include oak, red gum, yellow poplar, ash, basswood, beech, cottonwood, hickory, magnolia, sycamore and others of minor importance.

The major portion of today's cutting is coming from second, third and possibly fourth growth timber.

In January, 1937, standing saw timber in Alabama was estimated at 25,125,400,000 board feet of pine and 13,438,700,000 board feet of hardwoods and cypress. Because of the heavy drain of the last several years

due to the national emergency the total raw timber stand may have been reduced to approximately thirty-five billion board feet.

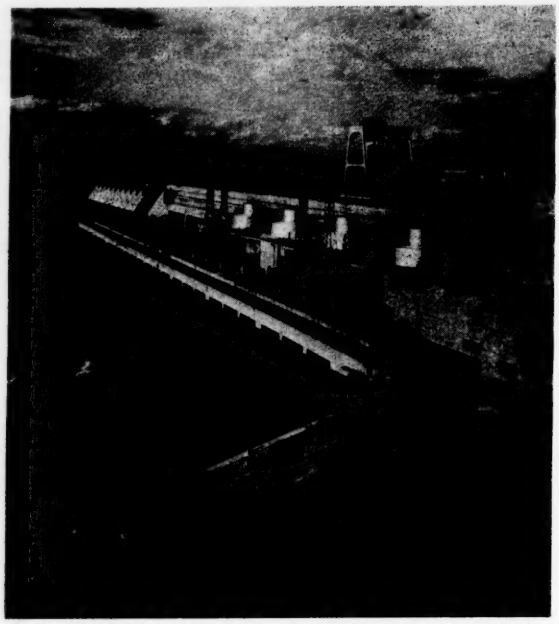
In addition to placing the state third in the Nation in production of lumber, Alabama forests are the source of poles, crossties, piling, mine timbers, veneers, cooperage, pulp, fence posts, handle stock, turpentine, rosin and a variety of other products.

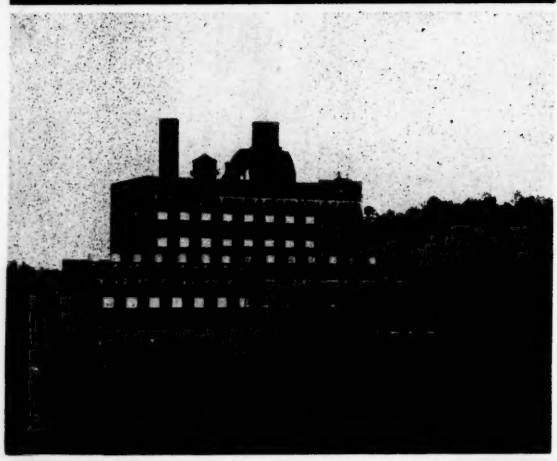
Of the total forest area of 19,000,000 acres, approximately 10,000,000 acres are under intensive fire protection and 6,000,000 acres are being managed according to good forest practices. A program is under way to bring all the forest land of the state under protection within the next five years and to greatly increase the area under forest management.

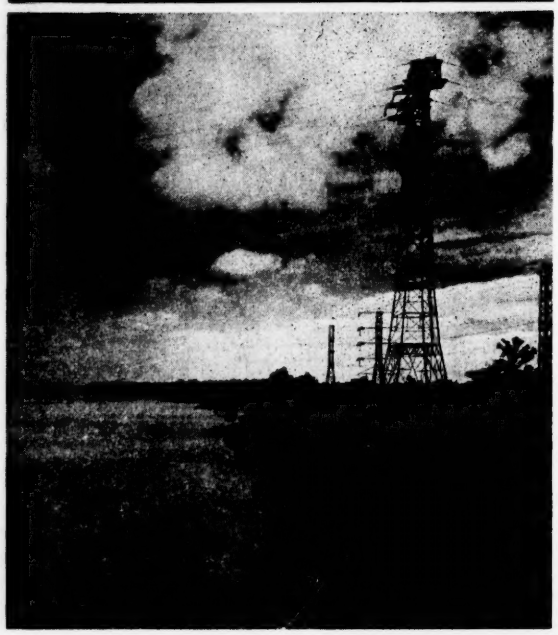
The Alabama Tree Farm System inaugurated in 1942 by the Alabama State Chamber of Commerce in cooperation with the State Division of Forestry and the Southern Pine Association is doing much to conserve and perpetuate the state's forest resources. More and more forest landowners by keeping out fires, practicing selective cutting and planting seedlings, are qualifying to receive Tree Farm Certificates and standard signs for their land. Forestry courses in the Vocational Agriculture classes of the state's schools, and a program with the Future Farmers of America in the state of planting seedlings, are parts of the Alabama Tree Farm System's program.

With proper care and attention, it does not require a lifetime to grow a crop of timber in Alabama. Its trees, under proper management, grow at a rate to provide a reasonable return on invested capital. Landowners are realizing that timber is a crop and are protecting their properties from fire and trespass. They are instituting and using cutting methods that will make their forests self-perpetuating. The state is making real progress in placing its forest resources on a self-perpetuating basis.

Right: "An Ounce of Prevention." Below: Modern Timbering







—POWER AND FUELS

Alabama is in an excellent situation with respect to the supply of electric energy. Within its borders are streams and coal deposits sufficient to produce abundant and economical supplies of electrical energy. Since the early days of commercial electricity, Alabama has taken a place in the power industry. The first commercial electric railway system in America was established in Montgomery in 1886. One of the first long transmission lines in the eastern United States was put into service in Alabama as early as 1902.

Intensive development of generating capacity has been under way since 1914, and the state has always been in the forefront in providing capacity in advance of the need for it. Alabama Power Company, pioneer in the development of the power resources of the state, has six hydro plants having a capacity of 414,500 kilowatts and steam electric generating plants having a capacity of 288,000 kilowatts. The Tennessee Valley Authority has three great dams on the Tennessee River in north Alabama with a present installation of 512,500 kilowatts, and a steam plant of 64,000 kilowatts.

As of January 1, 1944, in the whole state there were 13 hydro-generating plants having an installed capacity of 959,603 kilowatts, 17 steam electric generating plants with 379,360 kilowatts, and 10 internal combustion engine plants with 4,609 kilowatts, making a total of 1,343,572 kilowatts.

Actual production of electricity by public and private plants in 1943 totaled 6,745,913,000 kilowatt hours, including 5,294,143,000 kilowatt hours from hydro plants, 1,446,561,000 kilowatt hours from steam plants, and 5,209,000 kilowatt hours from internal combustion plants.

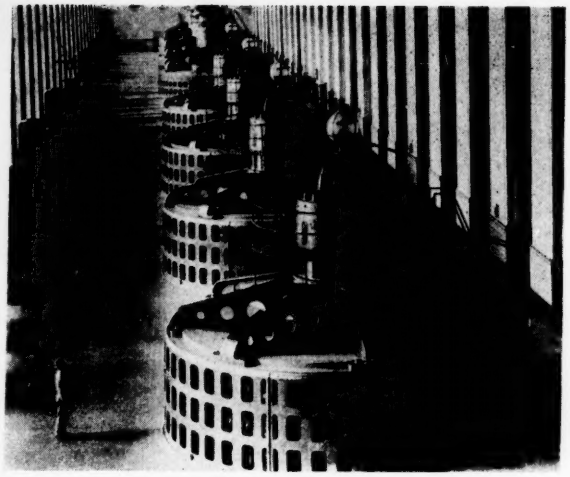
A network of transmission and distribution lines reaches into every part of the state. Many thousand miles of rural electric lines are now in service and plans are being laid to extend rural electrification into the remotest areas as soon as necessary materials are no longer needed in the war effort. A number of interconnections have been made between the systems in Alabama and the systems in adjoining states and a number of interconnections exist between the various systems in Alabama.

The establishment of new plants, the accelerated operation of existing plants, and the influx of families in connection with the war effort have meant increased consumption by nearly all classes of electric customers.

Top: Great Power Dam on the Tennessee River

Center: Steam Power Plant

Bottom: Transmission Lines Deliver Power and Light to Every Part of the State



Generators in a Hydro Electric Plant

No industry need hesitate to establish a plant in Alabama because of fear that the power supply may be inadequate. No industry need hesitate to establish a plant in Alabama because of an unfavorable electric rate situation. The supply is adequate and the rates are low.

In addition to its electric energy Alabama is in a fortunate position in regard to fuels and fuel costs. Alabama coal fields have total reserves of perhaps 75,000,000,000 tons. Annual coal production averages around 12,000,000 tons. Coke production for industrial purposes annually averages 3,500,000 tons. Both the mining of coal and the making of coke are capable of expansion to meet any future industrial needs. By-product gas is produced in large quantities in the Birmingham and Gadsden areas. Natural gas has been piped into Alabama from the Louisiana fields and is available for industrial use in most sections of the state. There is now promise of a major oil field developing in southwest Alabama. Five small wells are producing in Choctaw County. Thus, all the major industrial fuels, as well as electric energy, are available in quantity and at reasonable cost to meet future developments.

—TRANSPORTATION

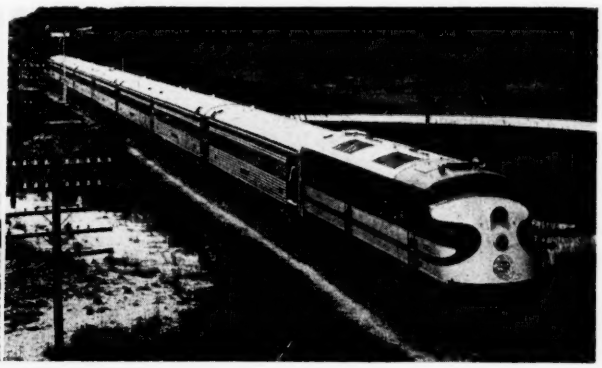
The transportation systems of Alabama have been well developed and are keeping pace with the state's growth and the increase in traffic and travel.

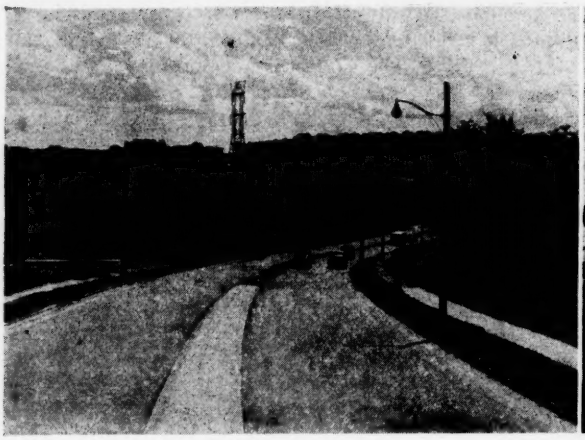
Railroads. The first railroad west of the Allegheny Mountains was built by the Tuscumbia Railroad Company and chartered January 16, 1830. This later became the old Tuscumbia, Courtland and Decatur Road. The second railroad in the state was the Mobile and Girard Road built in 1845. Other early lines included the Alabama and Tennessee Rivers Railroad from Selma, Alabama, to Rome, Georgia, built in 1853, and the Montgomery to West Point Road, built in 1854. These lines are all in operation today as part of existing systems.

From these early beginnings, Alabama's railroads have developed into a network covering the entire state. There are 17 Class I railroads operating in Alabama with a total mileage of 5,098 miles. There are eight short lines with a total of 118 miles. The railroads have played an important part in the industrial and economic development of the state. Today they are rendering perhaps the greatest service of their history in moving the increased production due to the important part the state is taking in furnishing materials and food to our armed forces and our allies. Modern, streamlined trains give well planned passenger service to all sections of the country and improved and accelerated movement of freight meets the requirements of industries.

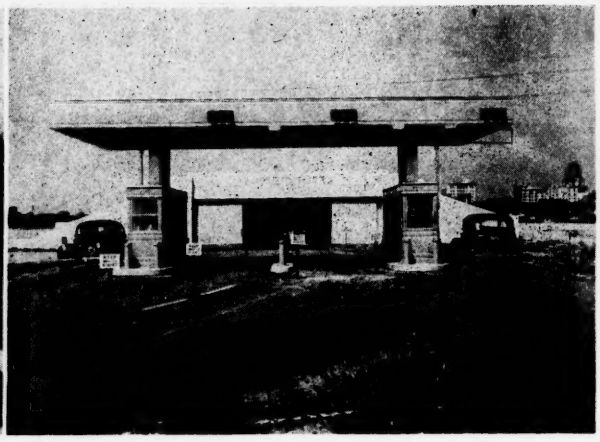
Highways. The state has an excellent system of modern highways. There are 5,482 miles of hard surface roads under the maintenance of the State Highway Department, with an additional 1,057 miles of hard surface roads in the county road systems with

The State is Served by its Network of Railroads



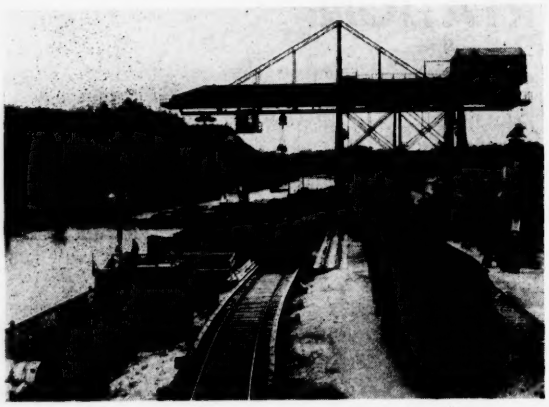


Four Lane Highway



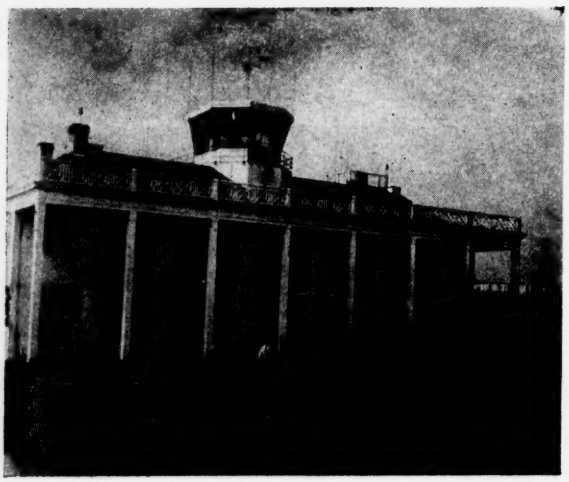
River Tunnel Entrance

many thousands of miles of gravel, stone and surface roads connecting with these main highways. An excellent system of modern bridges is a part of the highway system and these bridges are all free of toll. Motor freight lines and bus lines give adequate service within the state and to other sections of the country.



Rail and Water Transportation Supplement Each Other

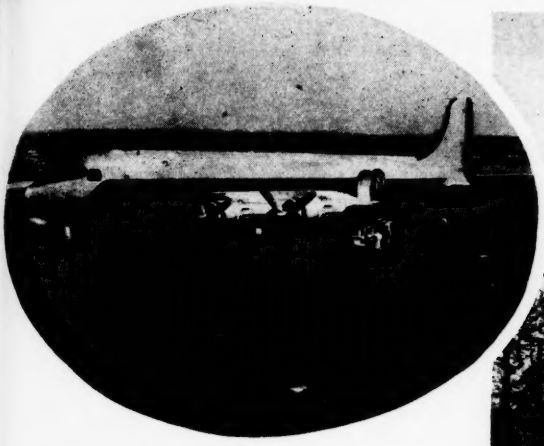
Airline Terminal

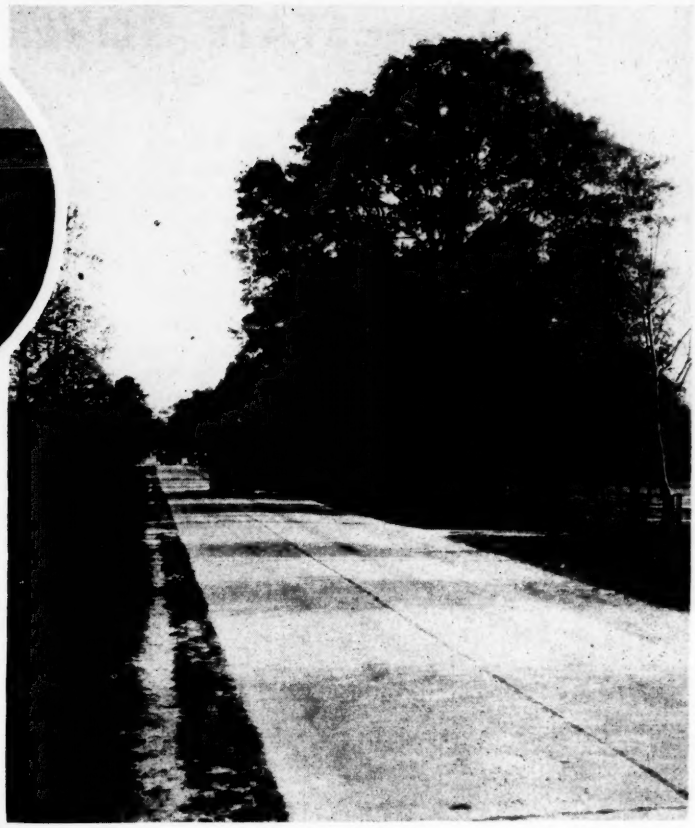


Air Lines. Today there are four major air lines operating in and out of Alabama with connections giving air service to most of the key cities of the country. Petitions are now on file for operation of additional interstate and intrastate lines which will offer further service. The state has moved forward rapidly in the construction of air fields and this work has been given great emphasis on account of the important part it has taken in the training of our Air Forces during the present war.

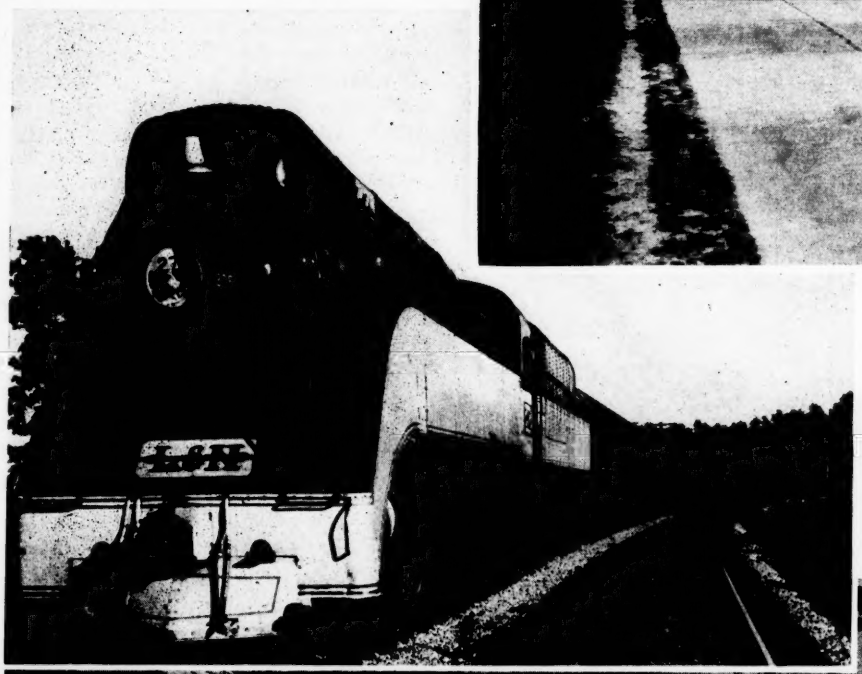
Water Transportation. In addition to rail, highway and air transportation, Alabama has more miles of navigable inland waterways than any state in the Nation. Sixteen hundred miles of navigable rivers provide excellent water transportation. From the early days of the steamboats, Alabama's rivers have had an important part in the economic life of the state. These river systems have been modernized with locks and dams. The great industrial Birmingham District has direct water transportation from Port Birmingham to Mobile by way of the Warrior, Tombigbee and Mobile Rivers. Parts of the Alabama-Coosa systems are navigable and plans are under way for the further improvement of this entire system. The Tennessee River is now navigable through its entire course in Alabama giving connections by water to all points touching the Ohio and Mississippi system.

Mobile, Alabama's chief Port, has one of the largest and most modern and complete systems of warehouses and docks on the Gulf of Mexico. The facilities of the State Docks at Mobile were built at a cost of more than $12,000,000. These facilities, in addition to a most modern arrangement of piers, warehouses and switch tracks, include a large cold storage plant, quick-freezing plant, fruit terminal, a bulk material handling plant, and all special and necessary equipment for handling heavy cargoes. The Port of Mobile offers excellent steamship connections with the Gulf Coast, through the intercoastal canal, and with South and Central America, Atlantic ports and through the Panama Canal to the Pacific Coast.

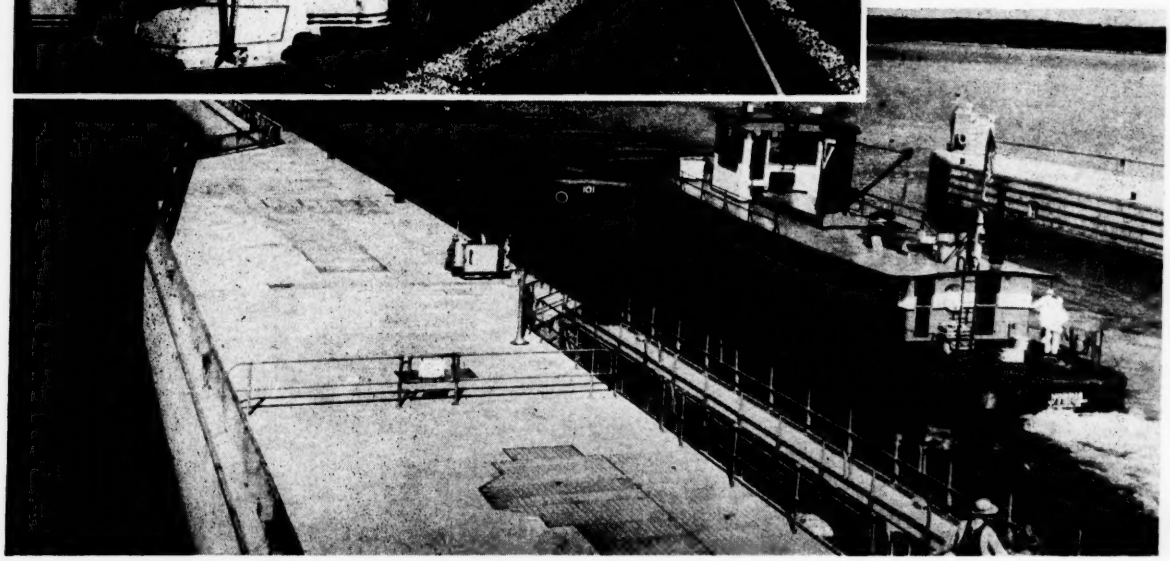




An Integrated System of Transport



Alabama Speeds Her Products to Their Destinations by Air, Land and Water



—STATE GOVERNMENT

Alabama has a two-house Legislature, the members of which are elected for four-year terms. The Legislature meets biennially for 60 consecutive calendar days, convening in May of odd-numbered years.

Administrative departments of the government underwent partial reorganization at the hands of the 1939 Session of the Legislature. Several new departments were created and a number of old ones abolished through a process of consolidating numerous existing agencies. These changes have permitted substantial savings and increased services to the extent that the Alabama set-up has been a pattern for several other states.

The new Department of Finance represents a synthesis of all budgeting, accounting, purchasing, and state property control functions. In this department also is maintained the state insurance fund which insures all state-owned property or places insurance on it with private companies. Another new department is the Department of Revenue which, superseding the old Tax Commission, collects all taxes except those like the property tax which are collected on the local level. The Department of Conservation was created by fusing agencies governing wildlife, forestry, and state parks. The Department of Industrial Relations was set up by combining the functions of the old Department of Labor, the Compensation Commissioner, the Chief Mine Inspector, the Unemployment Compensation Commission, and the Employment Service. The new Department of Commerce brought together all agencies regulating banks, insurance companies, and building and loan associations. Other agencies, like the State Highway Department, were reorganized to the extent of placing them under the administration of a director appointed by the Governor instead of the old Board or Commission. Alabama is among the few commonwealths in which the Governor is in reality the chief executive of state government.

State finance in Alabama has for several years been on a sound footing. In 1932 the state found itself with a floating debt of over $16,000,000. At that time, the Legislature enacted a Budget and Financial Control Act which forbids the spending of money pursuant to a legislative appropriation unless the money is actually in the treasury credited to the proper account. Shortly thereafter, the floating debt was funded and an income tax was levied to retire the debt. Since 1935 ample funds have been available and the state has had no difficulty under this law.

Nearly 40 per cent of state receipts in Alabama is derived from sales taxes (that is, taxes on gasoline, retail sales, use, and tobacco). Income taxes yield about 8 per cent; general property taxes, 6 per cent; motor vehicle licenses, 4 per cent; and corporation taxes, 2 per cent. Over 13 per cent of all state receipts comes from Federal grants, and 7 per cent is derived from profits of the state liquor monopoly.

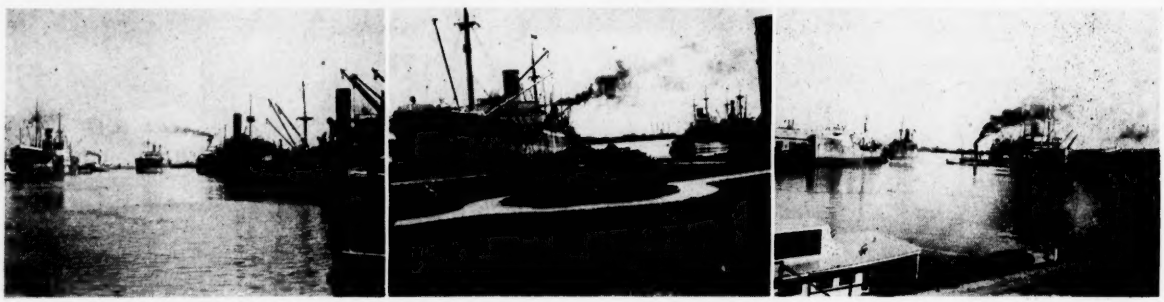
In 1943, 32 per cent of state expenditures went for schools. Grants to counties amounted in 1943 to 12 per cent. These grants were largely for county road purposes and for health and welfare. Highways were also the object of 12 per cent of state expenditures although this function commands a bigger proportion of the state's dollar in normal times. Some 9 per cent of Alabama's expenditures went to the service of the State's bonded debt. Social security and old age and Confederate pensions received some 5 per cent, and 4 per cent was expended for the purpose of correction. Altogether in 1943, the state took in $87,584,691.33 and spent $77,028,503.06.

In May 1944 the director of the State Department of Finance prophesied that all state funds will have a total surplus of $43,000,000 by the time the Legislature convenes in May 1945.

The total of Alabama's debt on September 30, 1943, was $60,533,000. Principal and interest service on this debt amounts each year to something less than $5,000,000, and the debt is being steadily retired at the rate of approximately $4,000,000 annually.

The state government of Alabama has had a Merit System since 1939, under which state employees, numbering in normal times between 6,000 and 7,000, are selected on the basis of competitive examinations for appointment to the classified service. Most observers are agreed that the state service ranks with the best in quality and efficiency. The state personnel system extends not only to state employees but also

Sea-Going Vessels Use Alabama's Waterways



in some instances to local government. All employees of county boards of health are selected by the State Personnel Department. A special personnel board, operating as an auxiliary to the State Department of Public Welfare and the State Personnel Board, manages the selection of the personnel of county welfare boards.

The government of Alabama operates two large public service enterprises—the State liquor monopoly and the State Docks and Terminals. The liquor monopoly is administered by the Alcoholic Beverage Control Board. The state operates a monopoly of the retail package sale of vinous and spirituous liquors, and maintains over 50 liquor stores in the 18 wet counties. It also monopolizes the wholesale distribution of hard liquor and wines to licensees for on-premise use. Private distributors are permitted to sell malt beverages at wholesale to licensees. The state liquor monopoly has, since its inception in 1937, always been a fruitful source of public funds—in 1943 liquor profits amounted to nearly $6,200,000. These funds are given partly to the counties and partly to the cities although, by far, the larger portion of them goes into the State General Fund. The second monopoly operated by the state is the Department of State Docks and Terminals. In 1927 there was floated a $10,000,000 bond issue for the purpose of buying and building dock and terminals facilities at Mobile. The Department charges fees for service and for the use of state facilities, and in this way pays its own cost of operation and contributes money toward servicing the docks and terminals bonds.

The Alabama prison system is very largely self-sustaining—it produces some 80 per cent of all of its costs of operation. All healthy prisoners work; several hundred are continuously employed by the Highway Department. Food is grown on the prison farms and processed by the prisoners. Cotton is raised, woven into cloth, and made into clothes for prisoners and for sale. The management of the prison system is placed in the hands of the Department of Corrections and Institutions. Working in close conjunction with this department is a Board of Pardons and Paroles.

County government in Alabama has shown little change in recent years. All counties are governed by county commissioner courts or boards of revenue. County affairs are regulated extensively by the State Legislature through local and special laws. Every county has up-to-date health, welfare, and education departments, each of which is closely supervised by state agencies. Jefferson (Birmingham) and Mobile Counties maintain sound merit systems which, in each instance, serve not only the county but also the cities within the county.

The percentage of cities governed by the commission form of government is larger in Alabama than in most other states. Two cities (Mountain Brook and Sylacauga) have the city manager form of government. Alabama cities are not so largely dependent upon the yield of the general property tax as a source of revenue as are the cities in most other states. A sizable portion of local revenues is derived from municipally levied licenses and excises.

Some idea of the magnitude of the complex task handled so capably by the State Department of Finance is to be found in comparative figures, the latest available. In a portion of the activities summarized in these figures the Department had a direct part to play, in the remainder its participation consisted largely of indirect cooperation with Federal bureaus but was nonetheless important in securing the financial harmony existing today in Alabama.

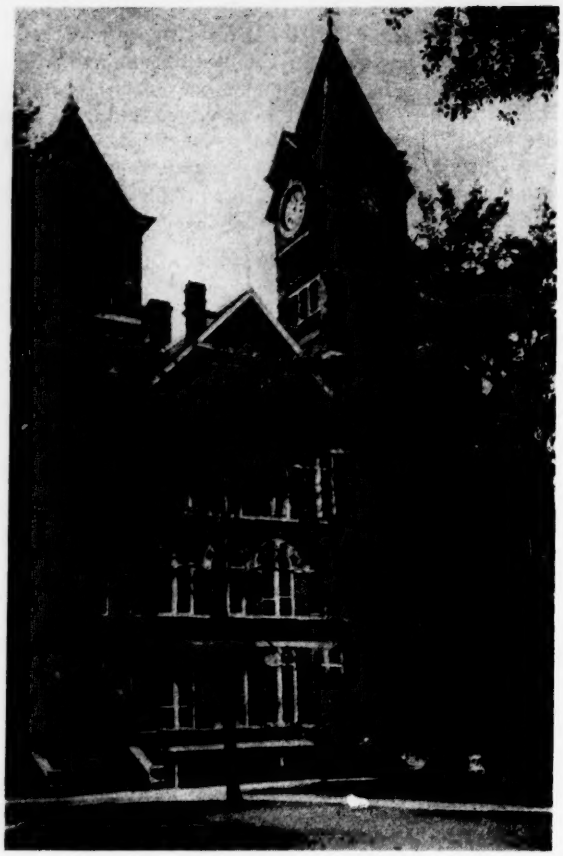
The report of the U. S. Comptroller of the Currency for June 30, 1942 shows the resources of Southern banks to have increased 43.5 percent over the previous year while the banks of the rest of the U. S. showed resources gains of only 21.6 percent. Against the overall Southern increase of 43.5 percent, the 218 banks in Alabama had an increase in aggregate resources for the same period of 64.9 percent.

Total deposits in Alabama banks for the 1942 fiscal year jumped to $694,247,000 from the $402,094,000 on deposit in 1941 or a percentage increase of 72.5. Of the 16 states considered in the Southern block only two exceeded Alabama in proportionate increases in bank deposits.

Life insurance in force in Alabama took a similarly healthy jump from 1942 to 1943. In 1942, insurance held by Alabamans totaled $1,213,552,000, but during the ensuing twelve months $80,514,000 more than was paid off, was taken out, bringing the total for 1943 to $1,294,066,000.

Social Security officials reported collections from Alabama amounting to $13,421,313 for the fiscal year of 1943, revealing taxable wage payments of $671,085,650 for that year. The same sources report collections for the 1944 fiscal year of $15,262,426 or a wages total of $763,121,300. Wage increases of 1944 over 1943 were thus $92,055,650 or 13.7 percent. This healthy increase considered with the much larger percentage of increase in bank deposits demonstrates the justified confidence Alabamans have in their banks and the efficacious part played by the State Finance Department.

Entrance to Main Dormitory Alabama College (Women)



Samford Hall—Alabama Polytechnic

and well-directed system which has made every tax dollar count. The State Board of Education through the State Department of Education exercises unusually wide powers over finances, courses of study, and administrative practices of the 67 county and 43 city systems. There is little of the waste and inefficiency which are inevitable in those States which have thousands of jealously guarded autonomous local school districts.

From the very beginning of public schooling in Alabama a principle of equalization of educational opportunity has been applied. The State treasury has always borne a large proportion of the cost and distributed its funds upon a basis of need—schools thereby have not been made dependent upon the narrow bounds of district taxation or local enthusiasm. The State at present pays 58 per cent of the cost of local elementary and high school education or nearly double the contribution of the average State of the Union; and this percentage has stood consistently high for twenty years. The weight of State support has made acceptable the existing strong State control of local school indebtednesses, building specifications, curriculum offerings, supervisory machinery, and other details which make for wise economy. Consolidation of rural schools is rapidly approaching its goal of a fully accredited school within convenient reach by bus of every home.

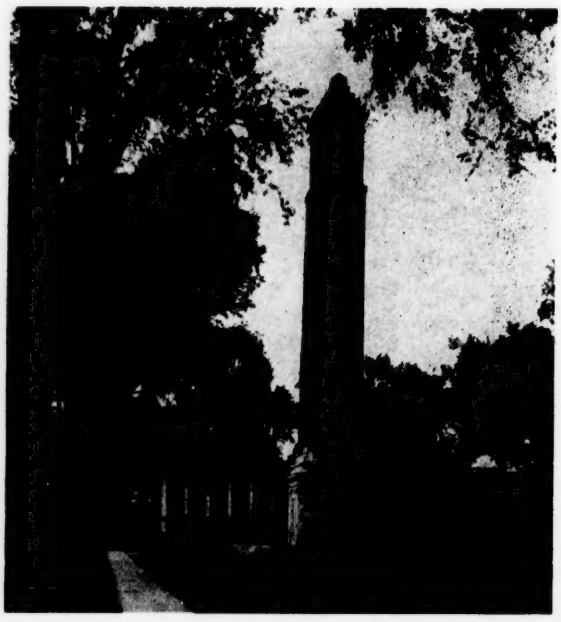
An adequate teacher retirement system, a plan of tenure and a minimum teacher salary scale based on training and experience, a scientific index for fixing abilities of areas of the State to support schools, and substantially larger appropriations have been enacted by the State Legislature the past few years. During the current biennium a State expenditure for

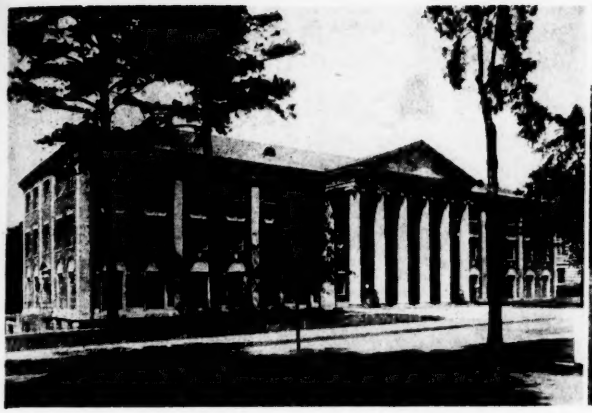
—EDUCATION

A program in Alabama of public elementary and high school instruction for all young people, bulwarked with compulsory attendance laws, substantial tax support, well-planned curricula, modern transportation, and effective administrative organization, has progressed at an amazing pace for three decades. The schools and the educational product of Alabama compare favorably with those of other commonwealths because of a peculiarly effective organization and in spite of relatively low tax rates and per capita costs.

The rapid development of public education in the State is partly due to the homogeneity of the population (over 99 per cent American-born and 89 per cent Alabama-born) and to the consequent absence of divided opinion and action within the educational field. Citizens have readily agreed to a rather centralized

The Chimes at the University of Alabama





Commerce Building—University of Alabama

Ross Chemical Laboratory—Alabama Polytechnic Institute

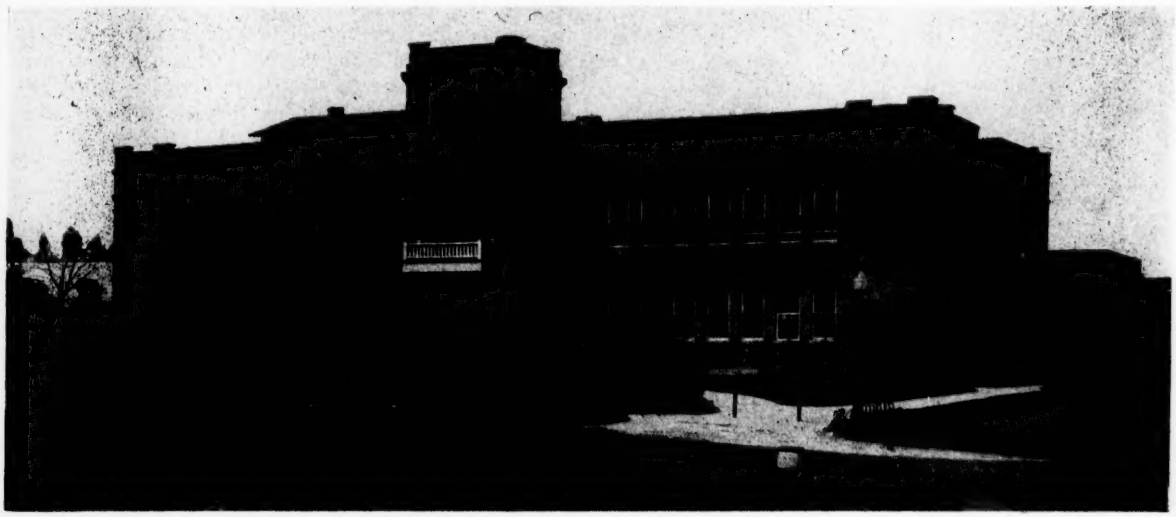
education of $49,620,000 or 38 cents of every tax dollar collected is planned—an increase amounting to more than $7,500,000 per year over the average of any preceding legislative period. This increase will permit new and enlarged facilities for Negro higher education and improved grammar and high school training for all children. Local funds given to education are growing through improved tax procedures; total local school board debt is small and could be canceled with a portion of balances on hand. An Educational Survey Commission created by the last session of the Legislature is now at work on recommendations for further refinement of the complete Alabama educational system.

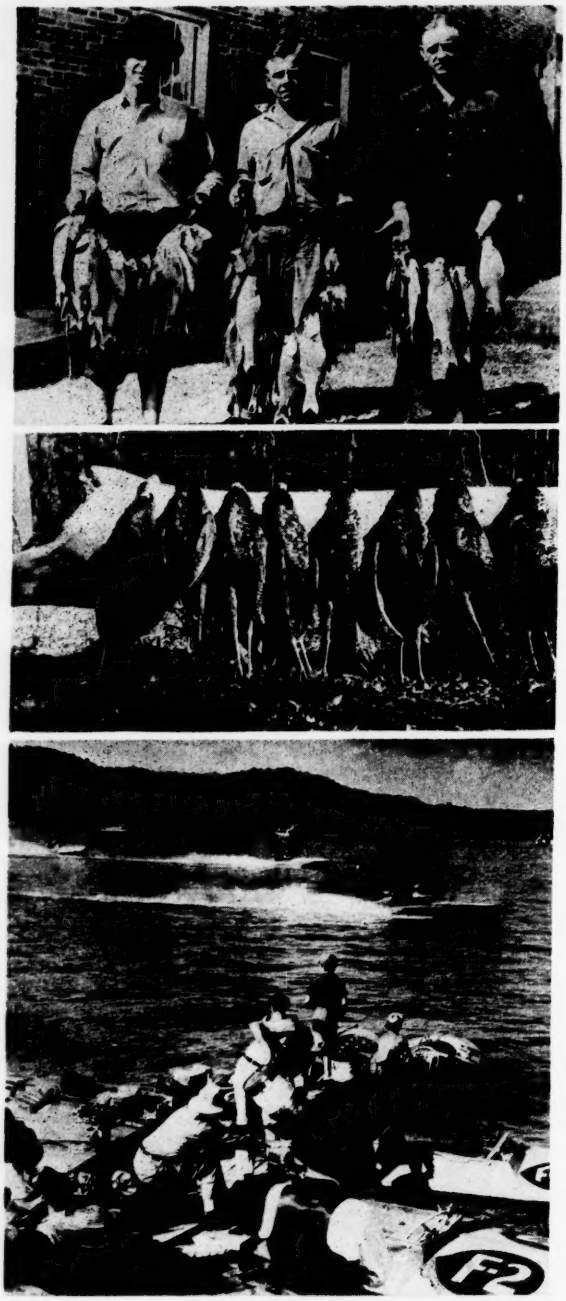
There are over 5,000 elementary and high school buildings in use over Alabama. To these schoolhouses more than 3,200 buses transport 229,702 pupils daily. Elementary enrollment is 465,000; high school enrollment, 203,000; and college enrollment, 31,000. Many additional thousands are served by extension classes organized by the colleges.

State institutions of higher education include the University of Alabama, at Tuscaloosa, with recently established four-year Medical School at Birmingham, Alabama Polytechnic Institute, at Auburn, Alabama College (for women), at Montevallo, and four teacher-training colleges located at Florence, Jacksonville, Livingston and Troy. The state also maintains the State Teachers College for Negroes at Montgomery and contributes to the support of Tuskegee Institute, well known college for Negroes founded by Booker T. Washington, at Tuskegee.

Other private and denominational institutions of higher education located in the state are Howard College and Birmingham Southern College, both at Birmingham, Judson College at Marion, Springhill College at Mobile, Athens College at Athens, and Huntingdon College at Montgomery.

Tuskegee Institute





A Variety of Recreational Interests to Suit Everyone

—RECREATION OPPORTUNITIES

From the sunny beaches of the Gulf shores to the Northern mountains, a wide variety of opportunities for recreation is found in Alabama. An excellent system of State Parks, State and National forests cover thousands of unspoiled acres available for outdoor pleasures. One State Park is on the Gulf Coast, several in the mountain section and others scattered over the state. These parks have comfortable cabins, completely equipped, central lodges, and facilities for many types of recreation.

Rare opportunities for enjoying sports afield with rod or gun are to be found. Thousands of miles of creeks and rivers, hundreds of lakes and the blue waters of Mobile Bay and the Gulf of Mexico challenge the angler to try his skill in waters alive with game fish.

Especially appealing to fishermen are the great lakes created by the development of the Tennessee Valley and by hydroelectric dams on rivers in the central part of the State. Bass, bream, wall-eyed pike, crappies, white lake bass and other species of fish abound in these waters.

Alabama offers the quail hunter excellent opportunities to enjoy this sport; it has more wild turkeys than any other state and large numbers of white-tailed deer are found in many sections.

People from far and near hunt and fish in Alabama and attend the state's annual Deep Sea Rodeo in August and the field trials held each year.

Tourist Attractions

Prior to the war Alabama tourist travel was increasing by leaps and bounds. Visitors from other sections of the country were finding much of interest here. In addition to its opportunities for recreation and sports, the beautiful and modern highways of the state make travel conditions attractive and thousands of visitors from the North and Midwest are stopping each year to see points of interest in this state of the Deep South, as they go to and from Florida and the Gulf Coast.

Game and Fish Abound in the Forests and Waterways of Alabama

In the midst of a rapidly developing modern state many beautiful old homes remind the visitor of a culture and civilization typical of the South prior to the war between the states.

The historical interest and architectural value of these beautiful homes increase with the years. With their gardens and their priceless treasures of period furniture they offer a view of yesterday to visitors.

The great power dams and lakes in the Northern and Central parts of the state are always of interest to visitors. In Montgomery, the state's capital and birthplace of the Confederacy, is located the beautiful State Capitol Building, still in use, where Alabama seceded from the Union and where Confederate statesmen cast the die that launched the War Between the States. Nearby is the first White House of the Confederacy where President and Mrs. Davis made their home during the early days of the Confederacy.

Nearby also is the new Alabama Memorial Building, a treasure-store of documents, pictures and relics of the stirring days of '61 and other periods of state history.

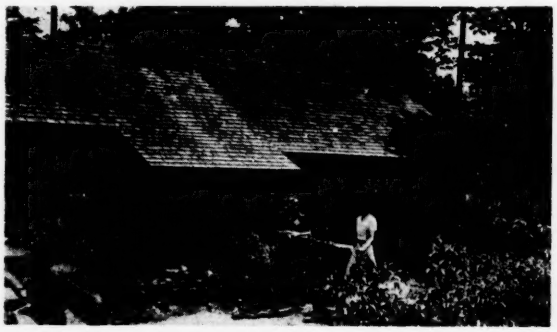
Mobile has its old homes and memories of Spanish, French and British rule. Its beautiful Azalea Trail attracts visitors from every section of the country. In close proximity to Mobile are the famous Bellingrath Gardens. These gardens are now open all the year, though they are probably at their best during the late winter and early spring when the Camelia Japonica and Azaleas, for which they are famous, are in bloom.

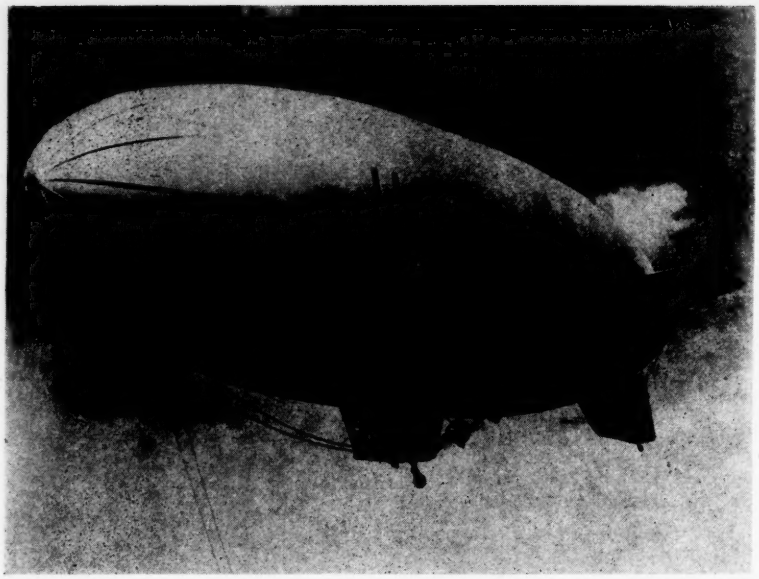
Towns and cities in every section, although availing themselves of modern developments, retain their historic interest. From the Spanish Trail along the Gulf, to the hills of the extreme Northern section, beauty spots abound. A detailed and complete tourist guide, which is profusely illustrated, has been published.

It today is indeed a land of fascinating contrasts. The State invites you to visit Alabama, to enjoy its beauty, to study its opportunities, to witness its developments, and to know its people, in the belief that you will then come to appreciate the full and broad meaning of the word "Alabama" as did the early Indians, and will find there opportunities for happy and successful living.

Right: Northern and Southern Alabama, 300 Miles Apart

In Forest Shade





Left—Naval blimps, filled with helium, the "miracle gas," patrol our coasts and spot enemy submarines.

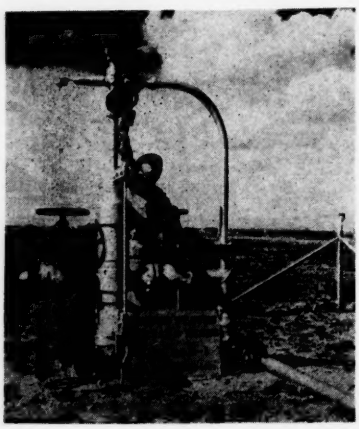
"Miracle Gas"—

helium presents challenge to industry and science

AMERICA'S abundant supply of helium, the lightweight and non-burning "miracle gas" of this generation, offers a ringing challenge to industry and science in the current and post-war world. The surface barely has been scratched in 25 years of research, and the time is yet to come when helium will be harnessed more completely for the service and betterment of mankind.

The United States enjoys a world-monopoly in helium. Its production and distribution is controlled by the Federal Government through the Department of the Interior, with the Bureau of Mines actually drilling the wells, building the plants and operating them. Expansion of the Bureau's facilities in wartime has resulted in a 2500 per cent increase over pre-war production.

Below—Turning on a gas well in the Cliffside field that supplies helium bearing gas to the Bureau of Mines plant near Amarillo, Texas.



All of the requirements of the Army, Navy, Weather Bureau and other agencies have been met in the emergency, and Secretary of the Interior Harold L. Ickes recently announced that considerable quantities of helium now are available for commercial, scientific and medical uses. Our reserves are adequate for many years, even at the accelerated rate of production. However, helium should not be wasted, for like petroleum, it cannot be replaced once the present underground supply is exhausted.

In view of the excess supply of helium, the Bureau feels that commercial interests should be informed of the availability of helium for use in industrial applications where its properties indicate that it might be suitable. However, the Bureau has no desire to suggest the use of helium unless it can be used to advantage, and unless its use will give results superior to those of other gases when all factors are evaluated.

Everyone knows that helium is playing a vital role in winning the war. Because it is non-explosive and, next to hydrogen, the lightest of all gases, it is used to inflate the blimps protecting the supply lines of Allied invasion forces from marauding Nazi U-boats. Helium carries meteorological balloons thousands of feet into the air to gather weather data for military planning, and it serves as an atmospheric shield in welding magnesium in the construction of bomber and fighter planes.

In addition to its lightness and apparent total chemical inertness, helium is considerably less soluble in liquids than most gases; it is a good heat transfer agent; it liquefies at a lower temperature than does any other gas; its refractive index is very low; and except at very low temperatures, it becomes warmer when it expands with reduction of pressure rather than becoming cooler as do most gases.

Helium already has been found invaluable in aeronautics, industry, and medicine, and additional uses are under study. Aside from lighter-than-air craft and the heliarc process of welding, a list of present and possible future uses of helium might well include its employment as a food preservative, a cleansing agent to remove impurities from molten metals, an extinguisher for magnesium and possibly other fires, a coolant for electric generators, in low temperature heat treatment, in explosion-proof motors, in refrigeration to produce very low temperatures, in optical instruments, and as a tracing gas to determine migrations of underground deposits of hydrocarbon gases.

In the medical field, helium is substituted for nitrogen in the com-

pressed air breathed by deep sea divers, tunnel workers, and others to eliminate or reduce "bends," or caisson illness. Other uses that appear promising on the basis of somewhat limited experiments are the prevention of "sky bends," a complaint of high-altitude flyers similar to that of divers; the treatment of pneumonia, asthma, and other respiratory diseases in which helium eases the burden on weakened lungs; and the elimination of the explosion hazards of anesthetic mixtures used in operating rooms.

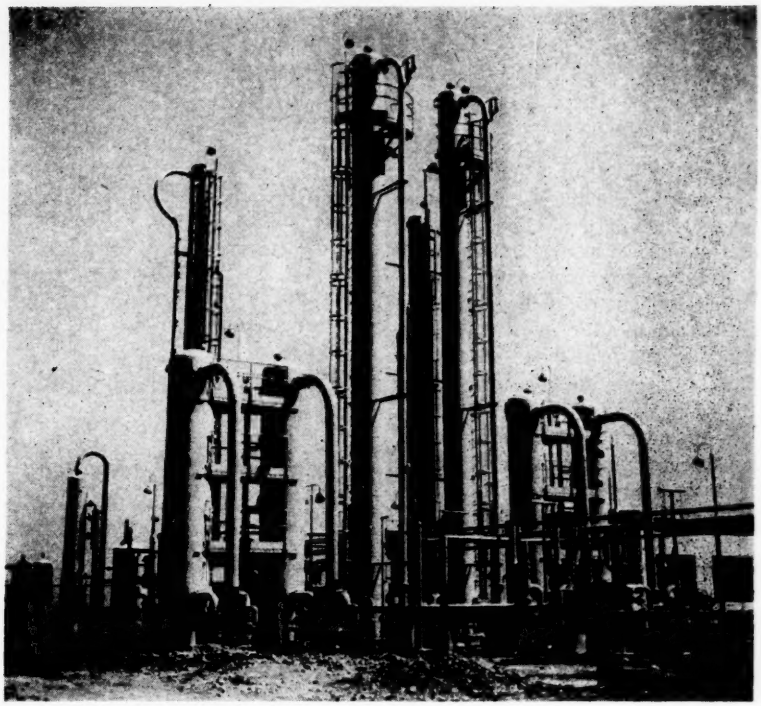
Probably the first and certainly the most extensive practical use of helium has been to give buoyancy to lighter-than-air craft, revived by the recent imperative need for anti-submarine weapons.

"Blimps have certainly pulled their weight in this war," Rear Admiral Charles E. Rosendahl, chief of naval airship training and experimentation, declared recently during the presentation of the Army-Navy "E" to the Amarillo and Exell, Tex., helium plants, two of five operated by the Bureau of Mines. Looking ahead, he said "in my opinion, we have by no means exhausted application of modern airship advantages to our naval power as well as to our aerial commerce, particularly in the postwar world."

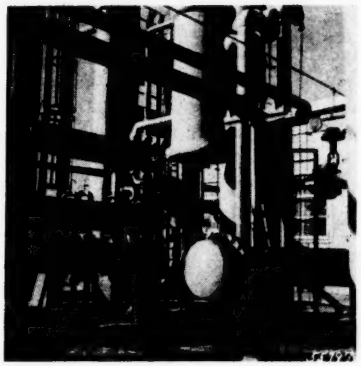
Contending that the large or rigid type of airship had been too quickly discarded, he said these today could be effectively employed as "fast, elusive airplane carriers over the vast ocean expanses where we must fight this war." Admiral Rosendahl envisaged a fruitful field for large cargo-carrying airships constructed by mass production methods, and added, "I am confident that when the absorbing subject of peacetime, world-wide air commerce is carefully analyzed it will be realized that the most economical, safest, most comfortable long-range, nonstop oceanic air service will be provided by very large airships."

Increasingly used in the heliarc method of welding magnesium, helium acts as a shield to prevent the metal from bursting into flame and to prevent the formation of oxides and nitrides. While less necessary in the welding of other metals, such as aluminum or steel, it produces better welds. It has been suggested that if steel and other metals were

(*Continued on page* 152)

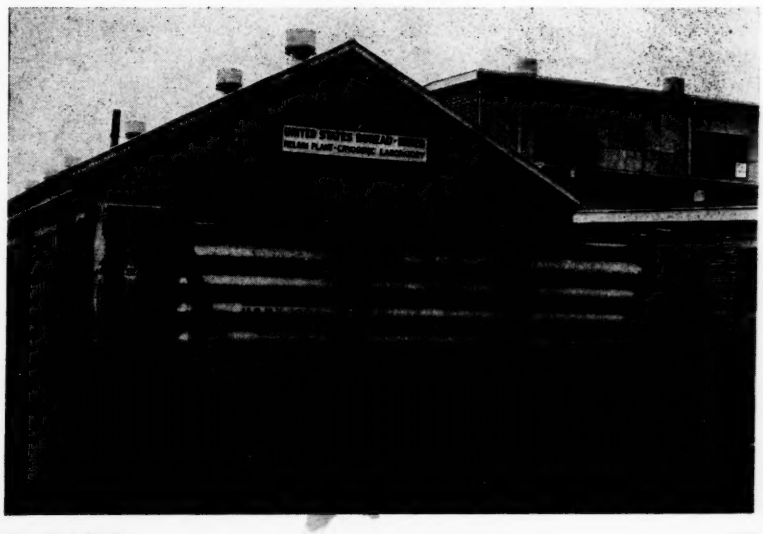


Above—Exterior of the carbon dioxide removal towers at the Bureau of Mines helium plant at Exell, Texas. Carbon dioxide, water vapor and hydrogen sulfide are removed from the incoming helium-bearing natural gas by a scrubbing process, the first step in extraction of the helium from the natural gas.



Left — Exchanger, boilers and columns of the new carbon dioxide removal unit at the Amarillo, Texas helium plant.

Below—Cylinders, 28 to the car, containing a total of 200,000 cubic feet under pressure of 2,000 to 2,500 pounds, thus unable to exert their power to lift 13,000 pounds into the air.



Fuel Conservation

by

W. E. E. Koepler
First Vice President
Smoke Prevention Association of America

ATOMIC and solar energy may someday be in harness, doing the fuel jobs now handled by coal, oil and natural gas, and that would be a clean, convenient and economical arrangement indeed. For a while, though, the present sources of power and heat must be made to do.

Despite the many dire forebodings about our dwindling oil and natural gas reserves, making them do is not so great a problem as some would make of it. Facts are often hard to face, but the worried fuel user, industrial or domestic, puts aside much of his pessimism when he weighs with an open mind the true fuel reserves situation. If square and round pegs are put where they belong, there is an ample abundance.

Take oil, for instance. Estimates of reserves vary bewilderingly. One set of figures contend we can go on using oil at our present rate for fourteen years and then there will be no more. Another respected authority says the oil supply is inexhaustible for the simple reason that nature is making it faster than we are using it. In all oil history, according to some charts, no more than one cubic mile of oil, approximately 2.6 trillion barrels, have been drawn from Mother Nature's innards.

On the middle ground are authorities who point out that even fifteen and twenty years ago the life expectancy of oil reserves was about what it is today; so, are oil reserves dwindling? New discoveries add to reserves, better processing, equipment and handling make each gallon go further and last longer. Just when the last drop of oil will flare up into BTUs must, it seems, be left to clairvoyance.

Or take natural gas. There is less bewilderment here. Almost all estimates revolve about a reserve sufficient for thirty years at today's usage. The chief cause for concern lies in the noticeable fact that seldom is encountered an expert who speaks of the possibility of new natural gas pockets being discovered. Users of natural gas are given thirty years to go and that is that. This article will not attempt to say why.

But, if conservative opinions are to be accepted, the exhaustion of oil and natural gas reserves must be anticipated. What then? There is wood, one of the four basic fuels, and electric power generated at dams, but these are in comparatively neglible use. Their future possibilities will be left to their proponents.

Then there is coal, and the picture brightens, the pessimists take cover. Coal reserves, it is generally estimated, will last four thousand years at the present volume of consumption.

Oil, of course, may be imported from the great pools of foreign regions, though the possible reluctance of those who control these sources to allow the United States, possessors of the largest known reserves, to have a sufficient quantity makes it advisable not to count on such fuel. Too, chemurgists, may produce synthetic fuels from vegetative and other matter and new fuels, not now dreamed of, may appear, but sound horse sense dictates caution. Users of oil and natural gas as fuels may someday find them hard to get. That that day may be far off, as measured against a lifetime, does not make the possibility any the less worth considering.

Wise policy suggests that the most be made of fuels while we still have them, that the day of their exhaustion be put off as long as possible. This requires the most efficient use of each type of fuel, the selection and development of better burning equipment, the solicitous maintenance of that equipment, and the fullest possible combustion of the fuel used, thereby deriving maximum power and heat. Complete combustion also eliminates the smoke and soot nuisance, a not inconsiderable goal in itself.

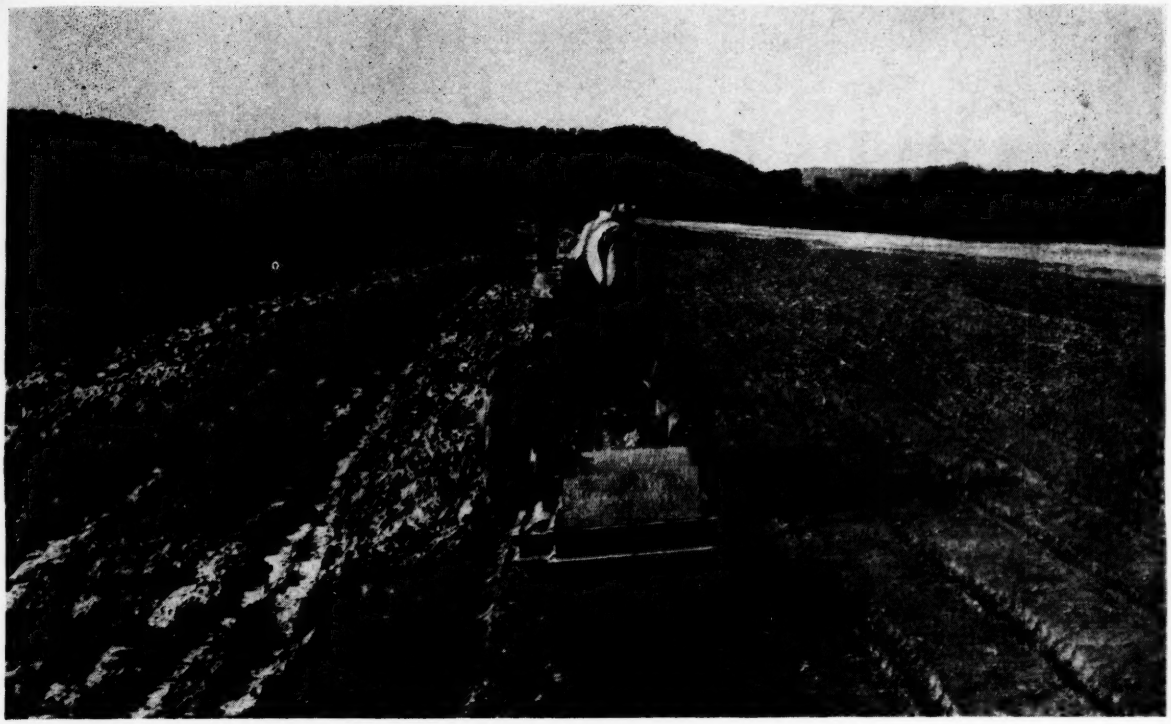
Wise policy further suggests the substitution of coal, which is plentiful, for oil and natural gas, which someday may not be, then the conservation of coal through the selection of the proper type for the whole situation. All coals will absolutely not serve all purposes.

Oil is favored by most engineers for certain purposes and conditions, as in the power plants of ships. Diesel locomotives operate efficiently and economically, surpassing coal-burning locomotives in many advantageous respects though the latter are constantly being improved in ease of operation, cleanliness and economy. Wherever it would be troublesome and expensive to use coal instead of oil, let oil be used, say those who weigh the matter.

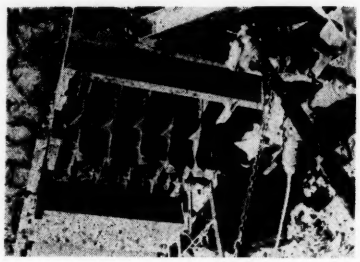
Colloidal fuels and coal, given the suitable equipment, may however be substituted for oil in many instances. Steam generating plants using residual oils at a high level of efficiency and domestic units using distillate oils none too efficiently, the latter occasioned not so much by faulty equipment as the incompetence of the operator, are cases in point. It has been estimated that such use of coal in these two cases alone would save five to eight per cent of our petroleum supply.

Further, capable figure jugglers have set at approximately fifty per cent the oil which could be saved by using coal in all cases where it would produce the required effect as acceptably as oil. This applies as well to the substitution of coal for natural gas.

The problem then is not a threatening shortage of fuel. It is the prudent use of what we have, the saving of what may become scarce, the adoption of that which is plentiful. It is the development of more efficient equipment, the utilization of each kind of fuel for the work it is best and most economically fitted to perform. It is simply a matter of calmly looking ahead.

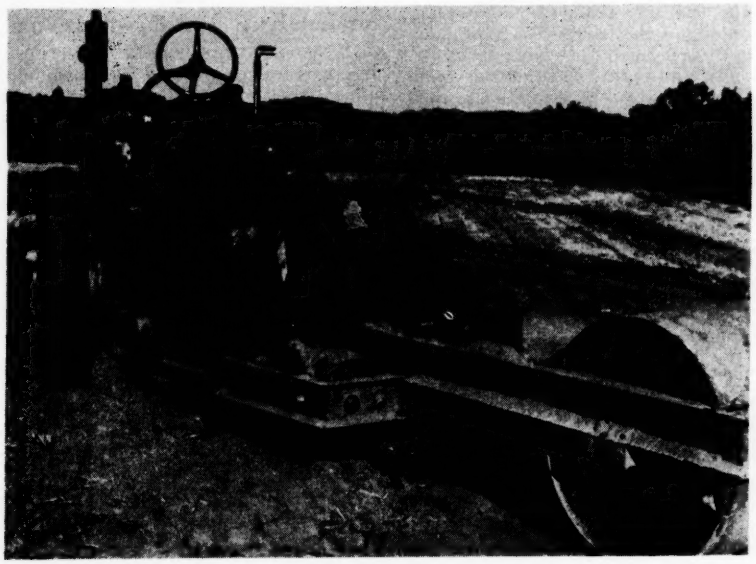


Above — The new McLaughlin "soil mixer" working a piece of land that was plowed over with a large double disc plow. The mixer was run over the land once and corn planted immediately.



Above — The five steel cutting discs equipped with V-type cutters alternately fashioned left and right.

Below — The "soil mixer." It consists essentially of forward fertilizer attachment, a series of five discs for cutting and mixing the fertilizer and soil, and a roller at the rear, together with the necessary shafts, transmission, differential and clutch. The unit is driven by power from a small tractor.



Farm Work Quickened by "Soil Mixer"

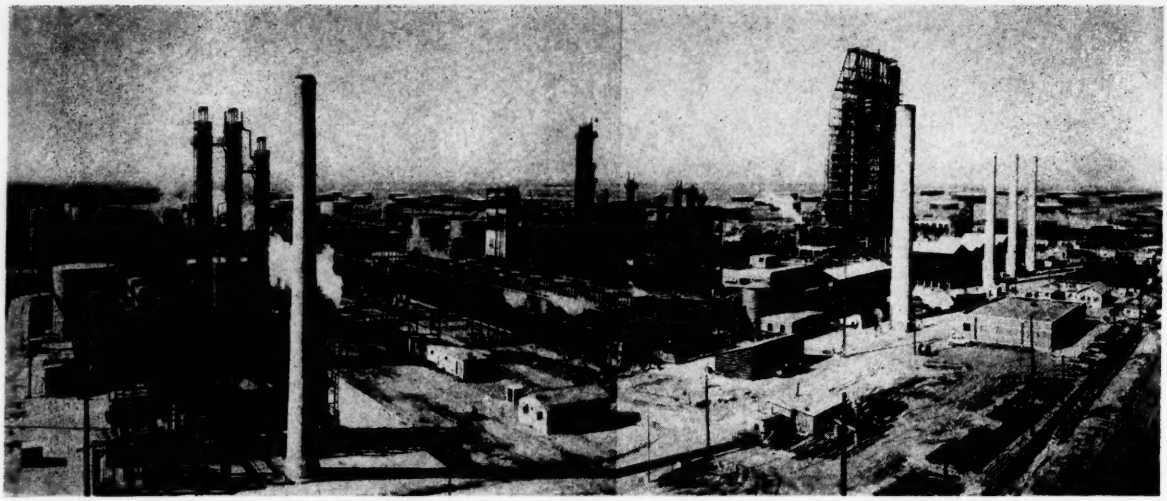
A NEW farm implement invented by J. B. McLaughlin, commissioner of agriculture of West Virginia, is expected by its inventor to speed present farm methods by combining the plowing, harrowing, fertilizer spreading, and rolling into one operation.

A working model of the "soil mixer" as it is called by Mr. McLaughlin has been used on the inventor's own farm and according to him the per acre cost of preparing eight acres of land for planting is reduced from $12 to $2.50 by its operation.

The machine consists essentially of an attachment for applying the fertilizer, a series of five large discs equipped with large V-shaped cutter teeth, and a hollow roller on the back. Fertilizer is spread by the forward attachment, with the rotating discs cutting into the earth to do the mixing job.

The machine is hitched to the draw bar of a tractor and is driven

(Continued on page 160)



Huge Plant First in Oklahoma to Make Finished 100-Octane Fuel

THE $17,000,000 refinery recently placed in operation at Ponca City by the Continental Oil Company is the first in the state of Oklahoma to manufacture finished 100-octane aviation gasoline in Oklahoma. It is a completely self-contained project for the production of blended aviation gasoline for army and navy use with the various components entering into the final blend being manufactured in the new facilities from raw feed stocks available from the plant.

A Defense Plant Corporation project, the refinery was built by the Lummus Company, of New York, and includes two thermofor catalytic cracking units, a thermofor catalytic cracking retreatment unit, a hydrofluoric acid alkylation unit and an aluminum chloride isomerication process.

In addition to the main processes, the plant has a control laboratory, rail trackage for simultaneous loading of 30 tank cars, storage for 240,000 barrels of finished products, and a redwood tower for cooling 30,000 gallons of water a minute.

The center unit of the layout is the thermofor catalytic cracking tower which reaches 234 feet above the surrounding terrain. There are four stacks 125 feet high and another, 150 feet in height. The 132-foot high and 11-foot diameter iso-pentane tower weighs 118 tons and was shipped to Ponca City in one piece on three railroad cars.

Adjacent to the 100-octane plant is a complete toluene plant, another Defense Plant Corporation project which was completed in September of last year and which since has been making toluene as a blend for 100-octane aviation gasoline.

Feed stocks for the new plant consist primarily of gas oil produced from refinery topping operations, a quantity of blending components fractionated and extracted from hydroformate available in the refinery, and from butane-butylenes from the refinery thermal cracking and topping operations.

Manufacture of blending components entering into finished aviation gasoline in the plant involves use of two standard size thermofor catalytic cracking units, one standard thermofor catalytic cracking retreating unit, a hydrofluoric acid alkylation unit, and an aluminum chloride isomerization process.

Existing facilities in Continental's Ponca City refinery will be used for production of the raw feed stock and the reprocessing of cycle and by-product stocks from the new aviation gasoline facilities, thus permitting production of the maximum possible quantity of 100-octane aviation gasoline.

Facilities of this new plant have been so arranged that a large quantity of daily production may be rapidly moved by tank truck or the entire output moved by tank car to meet the demands and needs of the Army and Navy.

The super fuel known as 100-octane gasoline is being made today in quantities far beyond the most optimistic dreams of two years ago. Current production figures are secret but the figure is many times the estimate of war requirements made at that time.

This wonder fuel enables a plane to fly farther on a given quantity, or to carry heavier loads, or to have greater speed. It gives Allied military aircraft a definite edge over opponents using lower octane fuel.

The octane scale is a means of measuring the power obtainable from gasoline. All fuels contain more energy than we get out of them. The percentage of a fuel's energy which is converted to useful work depends on the efficiency of the machine using the fuel.

A pound of gasoline contains 10 times the potential energy of a pound of guncotton; three times that of a pound of

(*Continued on page* 170)

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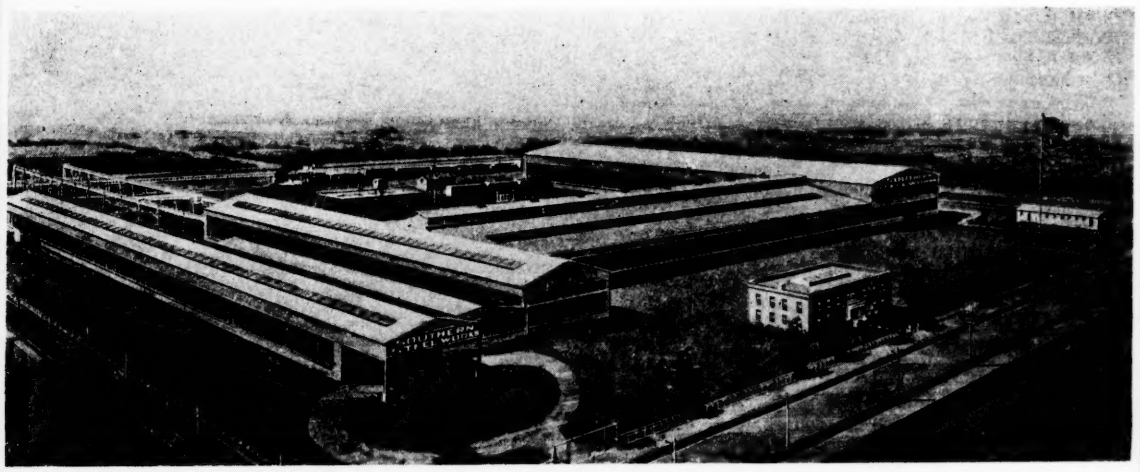


South's Contracts During July Reach Peak of Year So Far

Seven month total put at $487,021,000

by

Samuel A. Lauver
News Editor

SOUTHERN construction awards in July hit the peak of the year so far. Totaling $83,064,000, contracts last month were over seventeen per cent ahead of the figure for the preceding month.

Higher industrial and engineering contract totals were mainly responsible for the increase.

The leading work in the industrial field is a big contract for accelerated ammunition production in Missouri.

Maryland, Texas and Tennessee also provided the locales for projects that helped push the industrial contract total to its $24,061,000 level.

The Missouri project involved a $17,000,000 expenditure for expanding a General Motors project for making large size howitzer shells.

Maryland ranked second on the list with industrial awards totaling $1,799,000 and was the scene of several expansions, including a $950,000 magnesium forging plant, a $360,000 rubber products factory, a $185,000 explosives plant addition and a $100,000 addition to a Baltimore grain elevator.

Largest among southern cold storage projects, which suddenly broke into the news with Federal announcements of a crisis in the food cooling field, was a $1,000,000 project at Nashville, Tenn., where a new plant to be financed by the Defense Plant Corporation will be operated by Polar Cold Storage, Inc.

Other southern cold storage projects were those of the Merchants Cold Storage Co., of Dallas, Texas, and of the Kilbourn Ice Co., at Panama City, Fla. Together, they will cost $300,000.

One concern—Southern Acid & Sulphur Co.—participated in both the Texas and Tennessee industrial expansion. At Houston, Texas, $108,000 will be spent for additional facilities, while at Memphis, Tenn., more than three times that amount will go into a chemical plant addition.

A large Virginia chemical project was also recorded. This will be erected at Bentonville at a cost of $500,000. Owned by the Stauffer Chemical Co., of New York, the plant upon completion will produce carbon bisulphide.

Stanolind Pipe Line Co., of Tulsa, let contracts for a 40-mile loop of 16-inch pipeline in Oklahoma. Sheffield Steel Co. of Texas was authorized by the Defense Plant Corporation to expand its Houston facilities at a cost of $450,000. A $227,000 building contract was part of a shell plant expansion at Shreveport, La.

Public engineering construction, the other field where southern contracts

South's Construction by Types

	July, 1944 Contracts Awarded	July, 1944 Contracts to be Awarded	Contracts Awarded First Seven Months 1944	Contracts Awarded First Seven Months 1943
PRIVATE BUILDING				
Assembly (Churches, Theaters, Auditoriums, Fraternal)	$ 805,000	$ 986,000	$ 2,649,000	$ 842,000
Commercial (Stores, Restaurants, Filling Stations, Garages)	625,000	147,000	2,022,000	604,000
Residential (Apartments, Hotels, Dwellings)	2,719,000	4,575,000	33,102,000	34,112,000
Office	85,000	15,000	239,000	20,000
	$ 4,234,000	$ 5,723,000	$ 38,012,000	$ 35,578,000
INDUSTRIAL	$24,061,000	$ 16,771,000	$126,054,000	$201,980,000
PUBLIC BUILDING				
City, County, State, Federal	$13,910,000	$ 23,893,000	$ 91,798,000	$299,437,000
Housing	6,764,000	4,019,000	40,410,000	144,270,000
Schools	2,497,000	4,168,000	9,147,000	9,845,000
	$23,171,000	$ 32,080,000	$141,355,000	$453,552,000
ENGINEERING				
Dams, Drainage, Earthwork, Airports	$20,486,000	$ 45,841,000	$114,757,000	$183,398,000
Federal, County, Municipal Electric	147,000	479,000	600,000	4,322,000
Sewers and Waterworks	2,555,000	5,766,000	16,746,000	25,778,000
	$23,188,000	$ 52,086,000	$132,103,000	$213,498,000
ROADS, STREETS AND BRIDGES	$ 8,410,000	$ 15,405,000	$ 55,497,000	$ 81,787,000
TOTAL	$83,064,000	$122,065,000	$487,021,000	$986,395,000

South's Construction by States

	July, 1944 Contracts Awarded	July, 1944 Contracts to be Awarded	Contracts Awarded First Seven Months 1944	Contracts Awarded First Seven Months 1943
Alabama	$ 1,146,000	$ 5,541,000	$ 25,559,000	$ 32,806,000
Arkansas	568,000	997,000	2,441,000	27,990,000
District of Columbia	1,341,000	1,301,000	14,056,000	11,277,000
Florida	10,210,000	14,774,000	61,807,000	125,219,000
Georgia	2,300,000	22,728,000	27,069,000	66,102,000
Kentucky	650,000	3,454,000	16,898,000	27,111,000
Louisiana	6,199,000	7,316,000	34,523,000	51,587,000
Maryland	10,666,000	6,421,000	41,573,000	67,837,000
Mississippi	2,524,000	2,253,000	9,605,000	29,113,000
Missouri	18,178,000	3,158,000	33,608,000	15,267,000
North Carolina	2,460,000	2,070,000	16,383,000	37,216,000
Oklahoma	1,656,000	1,426,000	16,890,000	75,932,000
South Carolina	1,916,000	20,114,000	15,466,000	39,817,000
Tennessee	3,663,000	6,645,000	17,654,000	65,898,000
Texas	10,768,000	15,844,000	84,018,000	251,079,000
Virginia	7,729,000	4,736,000	57,076,000	53,762,000
West Virginia	1,090,000	1,287,000	12,395,000	8,382,000
TOTAL	$83,064,000	$122,065,000	$487,021,000	$986,395,000

moved upward during July, saw sharp increases in such projects as airports, with sporadic instances of earthwork awards in the Mississippi River area.

Private construction during July totaled $4,234,000, as compared with the $5,737,000 of the preceding month. The decrease was due to slackening activity in residential construction.

Private construction, according to the War Production Board, will see a continuation of a slow seasonable rise noted earlier in the year. Military and other public construction is expected to decline.

Southern public building in July showed a slight drop from the June level, but both months were far ahead of any others of this year with totals of $23,171,000 and $23,675,000, respectively.

The July public engineering figure of $23,188,000 is higher than it has been for two months. Only in April, when activity in this field mounted to $31,350,000, has a larger total been accumulated this year.

Total construction activity for the entire country this year will be around $3,550,000,000, or forty-six per cent of the 1943 volume and twenty-seven per cent of the 1942 figure, according to the War Production Board. The reason advanced for the drastic drop is the tight lumber situation.

The 1945 naval building program, much of which is scheduled for locations below the Mason and Dixon line, will mean a $500,000,000 outlay, with most of the sum to be spent for competitive contract work.

Approximately one-third of next year's budget for continental naval construction, it was recently announced by Vice Admiral Ben Moreell, chief of the Bureau of Yards and Docks, will be devoted to increasing air training facilities and new air bases.

Naval ordnance construction will cost $95,000,000; fleet facilities, $33,000,000; storage facilities, $70,000,000, and hospitals and extensions of existing institutions, $33,000,000. Naval personnel housing and training construction will cost $22,000,000, with $20,000,000 slated for similar work for the Marine Corps.

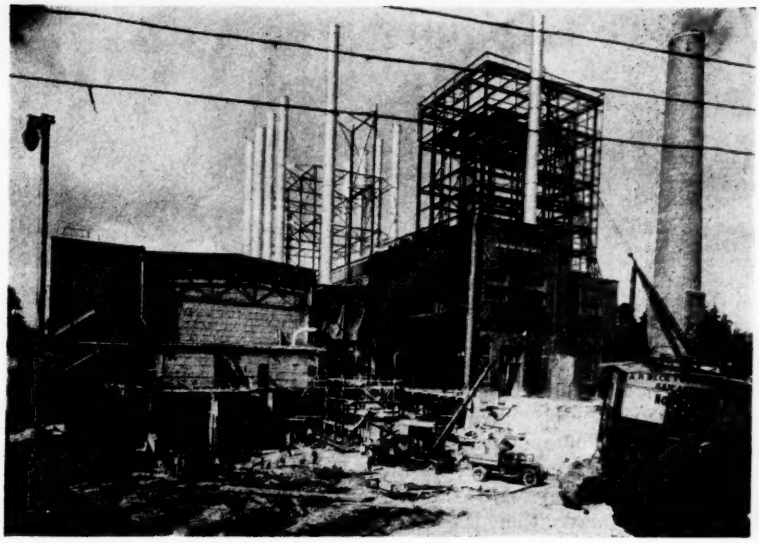
Rubber plant construction is practically completed. Bradley Dewey, the rubber director, in his progress report made late last month, said that primary construction of the more than 50 plants in the original rubber program has been completed.

A 14,000-ton expansion of the Louisville, Ky. neoprene plant is under way and a 10,000-ton privately financed butadiene plant is under construction at Bishop, Texas.

The 100-octane gasoline plant construction program is about eighty-eight per cent finished. This has been revealed by Ralph K. Davies, deputy petroleum administrator, who said 189 separate projects were involved and more than 150 have been finished.

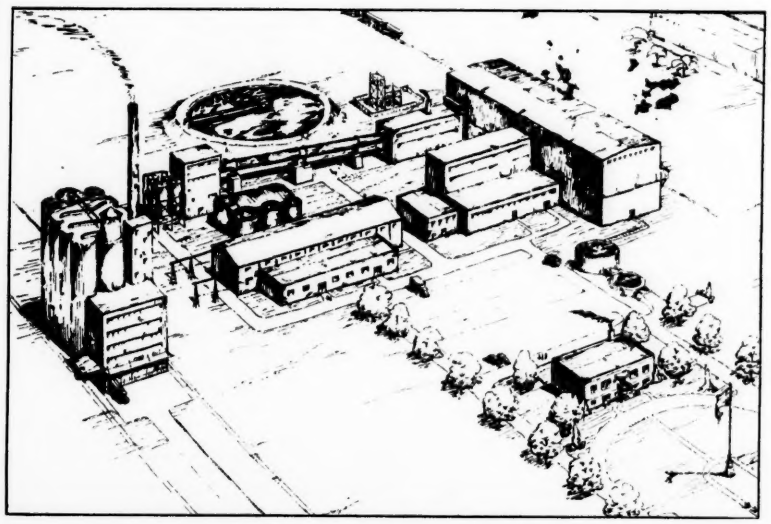
Highway and bridge construction dropped, as compared with the preceding month. July awards totaled $8,410,000; June, $12,331,000. Work in this field was most active in Tennessee, Louisiana, Texas, Florida and North Carolina.

State highway work deferred because of the war is estimated at $4,600,000,000, it is reported by Thomas H. MacDonald, chief of the Public Roads Administration. Programs so far reported involve $3,323,000,000 for rural roads and $1,277,000,000 for urban highways. Surveys and plans preparation are under way for about one-half of the deferred projects.



Above—General view of the new $2,000,000 electric power generating station being erected at San Antonio by the City Public Service Board of that city. Being installed under supervision of Gibbs & Hill, Inc., consulting engineers of New York, the project involves installation of a new 20,000-kilowatt turbo-generator and high pressure boiler, the former being furnished by Westinghouse Electric & Manufacturing Co. and the latter, by Babcock & Wilcox Co., through A. M. Lockett & Co. In addition to the new unit, which is being installed at Station B, the Board's Concepcion Road power plant, the work includes considerable rehabilitation of existing facilities. E. H. Kifer is assistant general manager of the San Antonio Board. The view is looking south and shows the turbine room basement, with the boiler room steel and brick stack in the background.

Below—Perspective of the 750,000-barrel plant to be constructed at Memphis, Tenn., by the Missouri Portland Cement Co., of St. Louis. Contingent on War Production Board approval, the plant will produce standard Portland, high early strength, masonry and concrete products cements. Cost is placed at $2,500,000.



Revere Expands Alumium and Magnesium Operations

THE $5,900,000 magnesium and aluminum extrusion plant operated by Revere Copper and Brass, Inc., at Halethorpe southwest of Baltimore will be expanded by addition of a $950,000 magnesium forging shop under an increase of the company's contract with the Defense Plant Corporation.

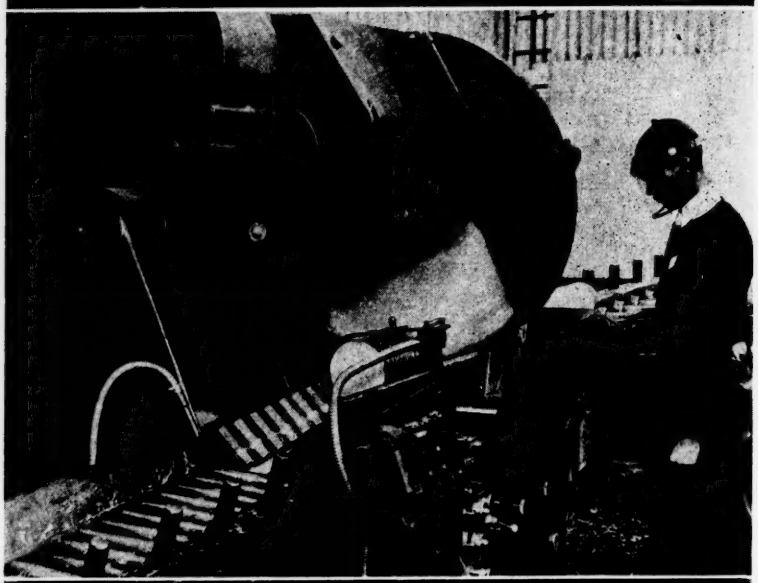
Announcements of the new extension, which with a $900,000 magnesium casting unit now being installed will place the plant in the front ranks of the industry, were made last month by Secretary of Commerce Jesse Jones and Irving T. Bennett, Revere vice president in charge of the company's Baltimore works.

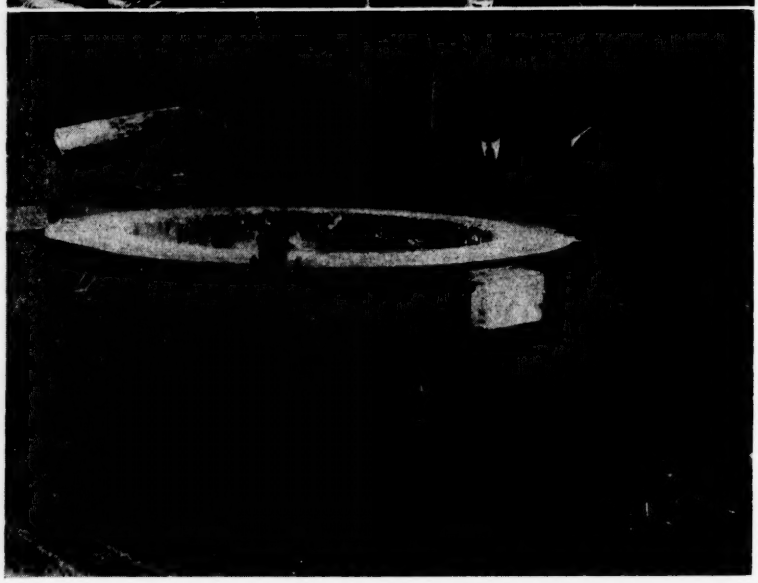
Forces of James Stewart & Co., engineers and contractors of New York, are pushing construction on the building for the new forge shop. Structural steel for the unit is now being erected by the American Bridge Co. and the brickwork is partly finished.

The two featherweight metals, aluminum and its twenty per cent lighter companion, magnesium, are received at the Halethorpe plant in ingot form, melted into various alloy combinations and then cast into long tubular sections which are cut into billets and extruded through dies and around mandrels to form such semi-finished products as rod, tubing and bars of rectangular and square cross section.

The casting process is unique in that the molds have no bottoms. The

(*Continued on page* 164)

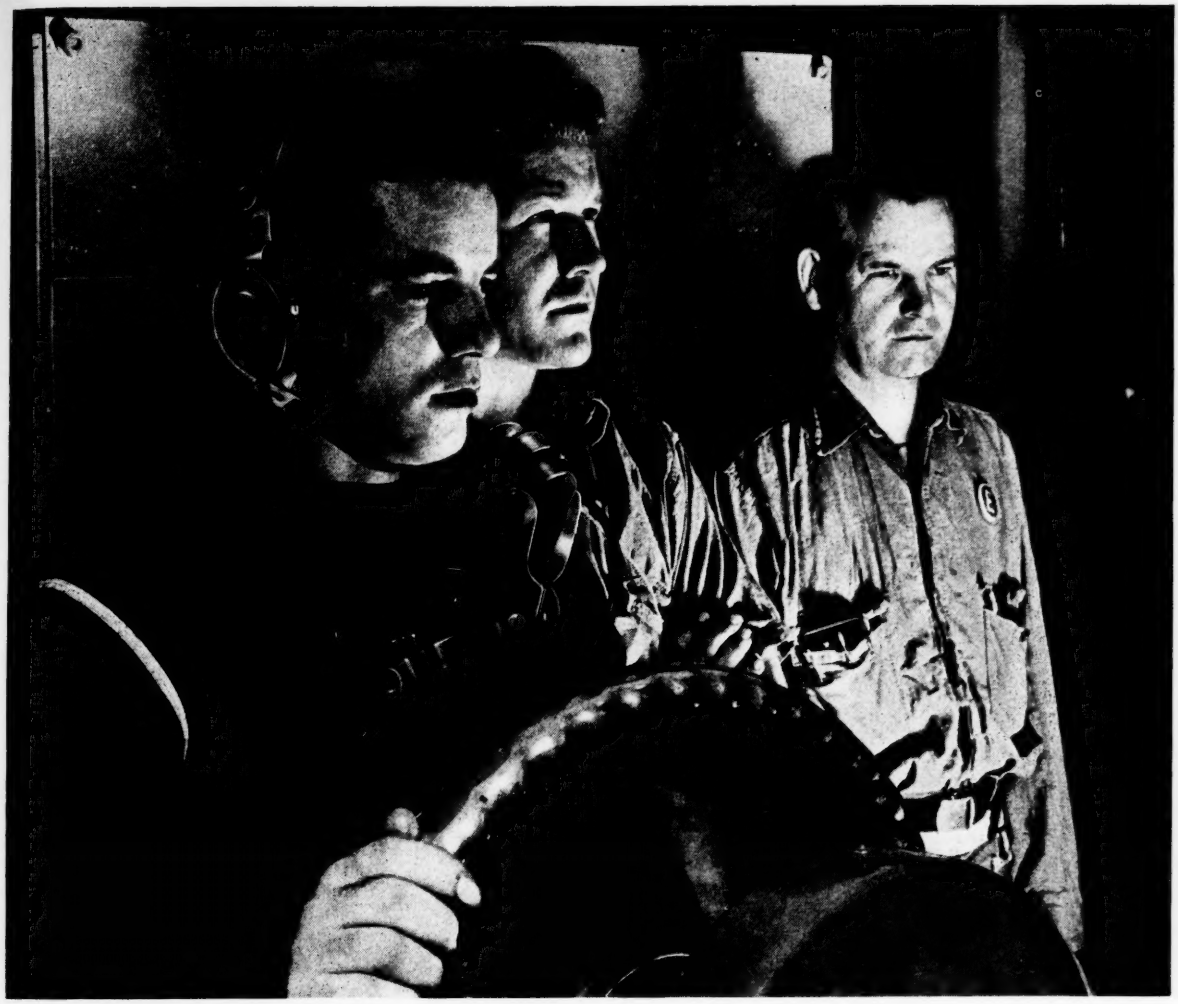




Right—top—Direct chilled casting unit at new Revere aluminum and magnesium extrusion plant.

Right — middle — High speed saw cutting aluminum into sections for extrusion operations.

Right — lower — I. T. Bennet, Revere vice president in charge of Baltimore operation, and A. N. Aird, works manager, inspecting one of the big ladles used in the casting process.



EMERGENCY STEERING STATION on U. S. battleship. The helmsman gets steering instructions over a battle telephone. The two other men are intently watching their gauges.

The Big "Battle Wagons" Are Run by Telephone

There are more than 2000 telephones on just one battleship. And many, many thousands on all the ships in the Navy.

The needs of war have first call on the country's manufacturing capacity and manpower. That is why there is not enough telephone equipment to take care of all civilian requirements and why many people now have to wait for telephone service.

It will be some time before all who want service can get it. We'd like those who must wait to know that we shall continue to do everything possible to shorten that time.

"GIVE 7 TO 10 TO THE SERVICE MEN"

and help their night-time Long Distance calls from the camps get through quicker to the folks at home.

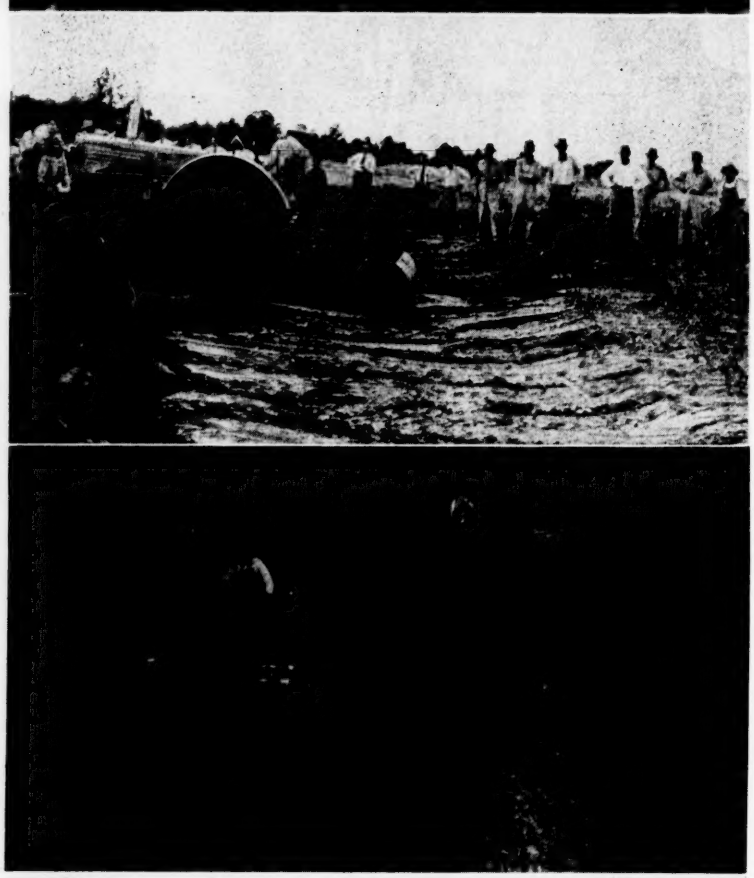
BELL TELEPHONE SYSTEM

Above — Whirlwind terracer used on Oklahoma conservation work.

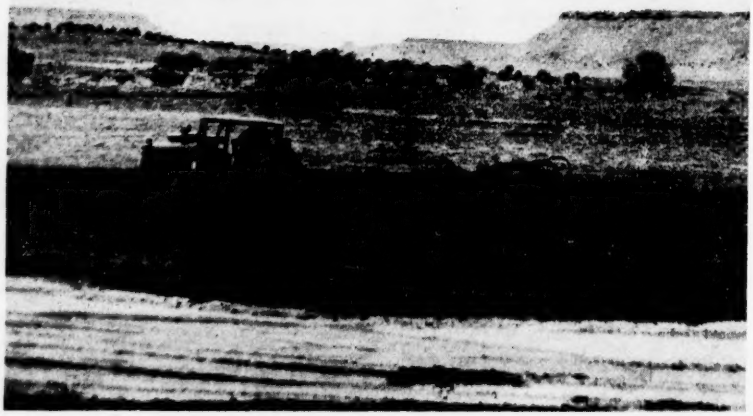
Oklahoma Conservation Cost Set at $175,000,000

EXPENDITURE of $175,000,000 would be required to carry out the soil conservation proposed for the State of Oklahoma, where according to estimates, 9,000,000 acres of land should be terraced, 4,900,000 acres re-grassed and re-seeded; 170,000 farm ponds and 8,500 small lakes constructed, as well as 3,400 miles of drainage ditches, 6,000 miles of levees, 62,000 trench silos and adequate irriga-

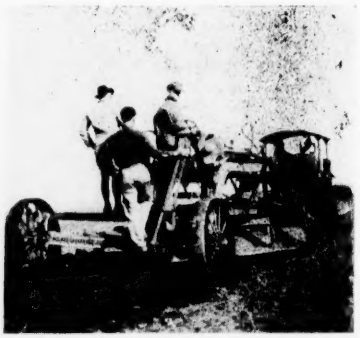
(*Continued on page* 150)



Left — Equipment used on Oklahoma conservation work. (1) Terrace construction with one-way disc and farm tractor: (2) Nicholas type terrace with farm tractor and rotary fresno; (3) dam being constructed with 8-foot bulldozer; (4) Crawler tractor with hydraulic carryall being used on dam construction.



Below—Broad base terrace being built with 12-foot road grader and 60-horsepower crawler type tractor.



10 BIG PLANTS

Geared to Serve the South's Post-War Construction Program

4 *Plants Producing* — "ENSLEY & ALA CITY" BASIC SLAG CRUSHED & SCREENED — Ensley, Fairfield, Thomas, Alabama City

Daily Capacity 10,000 *Tons*

---

2 *Plants Producing* — SLAGTEX BUILDING TILE — —and other Concrete Building Products at Ensley and Fairfield

Daily Capacity 20,000 8″ *Tile*

---

2 *Plants Producing* — **ENSLAG COLMIX** — Fairfield, Thomas

A Bituminous Paving Mixture Laid Cold

Daily Capacity 1,000 *Tons*

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2 *Plants Producing* — READY-MIX CONCRETE — Fairfield, Alabama City

Daily Capacity 800 *Tons*

Your inquiries invited.

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2019 SIXTH AVE., N. — **BIRMINGHAM, ALA.**

Branch Sales Offices: Atlanta, Thomasville, Ga.; Orlando, Fla.; Montgomery, Ala., and Jackson, Miss.

Washed and Screened Gravel and Sand

Ready-Mix Concrete and Cold Asphaltic Concrete

MONTGOMERY GRAVEL COMPANY

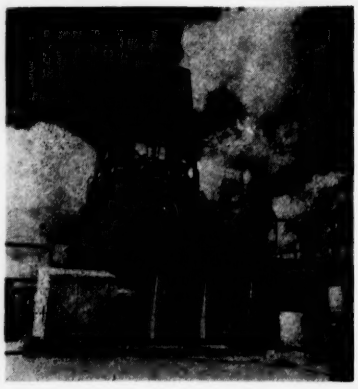
FIRST NATIONAL BANK BLDG. — **MONTGOMERY, ALA.**

South Gets Big Share of 100-Octane Program

by

Philip A. Stone

Construction Superintendent
J. G. White Engineering Corporation



THE magic fuel—"100 Octane" which gives our gasoline engine propelled fighting equipment that extra punch so vital in this war—is now a reality in huge quantities. United Nation's capacity has jumped from about 5,000 barrels per day before Pearl Harbor to more than 500,000 barrels per day at the present time.

This tremendous increase has been achieved by the extraordinary construction program which is now more than 88% completed and is rapidly drawing to a conclusion. These elaborate and complicated plants are located throughout the nation, from coast to coast. The list of the new construction given below, shows where the Southern plants are located. The South has received the lion's share which amounts to 45.5%. National distribution is as follows:

South	45.5%
East	12.1%
Midwest	21.2%
West	21.2%
	100.0%

Southern projects, as announced by Federal authorities, are:

J. S. Abercrombie-Harrison Oil Co., Sweeney, Texas; Atlantic Refining Co., Atreco, Texas; Ashland Refining Co., Catlettsburg, Ky.; Associated Refineries, Duncan, Okla.; Champlin Refining Co., Enid, Okla.;

Top of page—Catalytic cracking unit built in the South by J. G. White Engineering Corp., New York.
Left — Part of a southern alkylation plant.

Cities Service Refining Corp., Lake Charles, La.

Continental Oil Co., Ponca City, Okla.; Continental Oil Co., Lake Charles, La.; Continental Oil Co., Wichita Falls, Texas; Crown Central Petroleum Corp., Houston, Texas; Eastern States Petroleum Corp., Houston, Texas; Great Southern Corp., Corpus Christi, Texas.

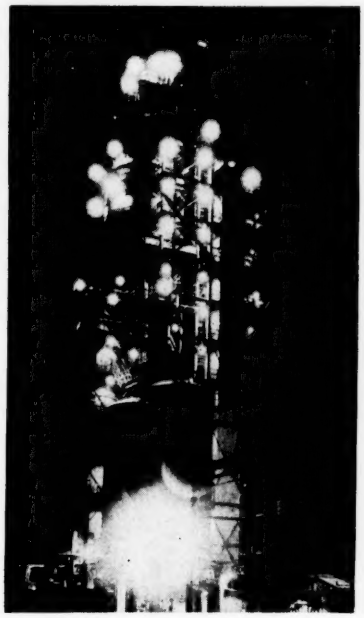
Gulf Oil Corp., Port Arthur, Texas; Humble Oil and Refining Co., Baytown, Texas; Magnolia Petroleum Co., Beaumont, Texas; Pan American Refining Corp.; Texas City, Texas; Phillips Petroleum Co., Borger, Texas; Premier Refining Co., Cotton Valley, La.; Pure Oil Co., Smiths Bluff, Texas.

Republic Oil Refining Co., Texas City, Texas; Root Petroleum Co., El Dorado, Ark.; Shell Oil Co., Houston, Texas; Sinclair Refining Co., Corpus Christi, Texas; Sinclair Refining Co., Houston, Texas; Southport Petroleum Co., Texas City, Texas.

Standard Oil Co. of Louisiana, Baton Rouge, La.; Standard Oil Co. of New Jersey, Baltimore, Md.; and The Texas Co., Port Arthur, Texas.

The cost of these 100 octane gasoline plants is in excess of $900,000,000 which is more than the cost of all phases of the synthetic rubber plant construction program.

This wonder fuel is not always the product of any one process or even of any one plant but is the result of the blending of many different materials brought about by the cooperative efforts of the entire petroleum and natural gas industries. Further, the various ingredients are not the results of separation or distillation of crude hydrocarbons alone, but are derived from some of the most advanced practices of the chemical art.



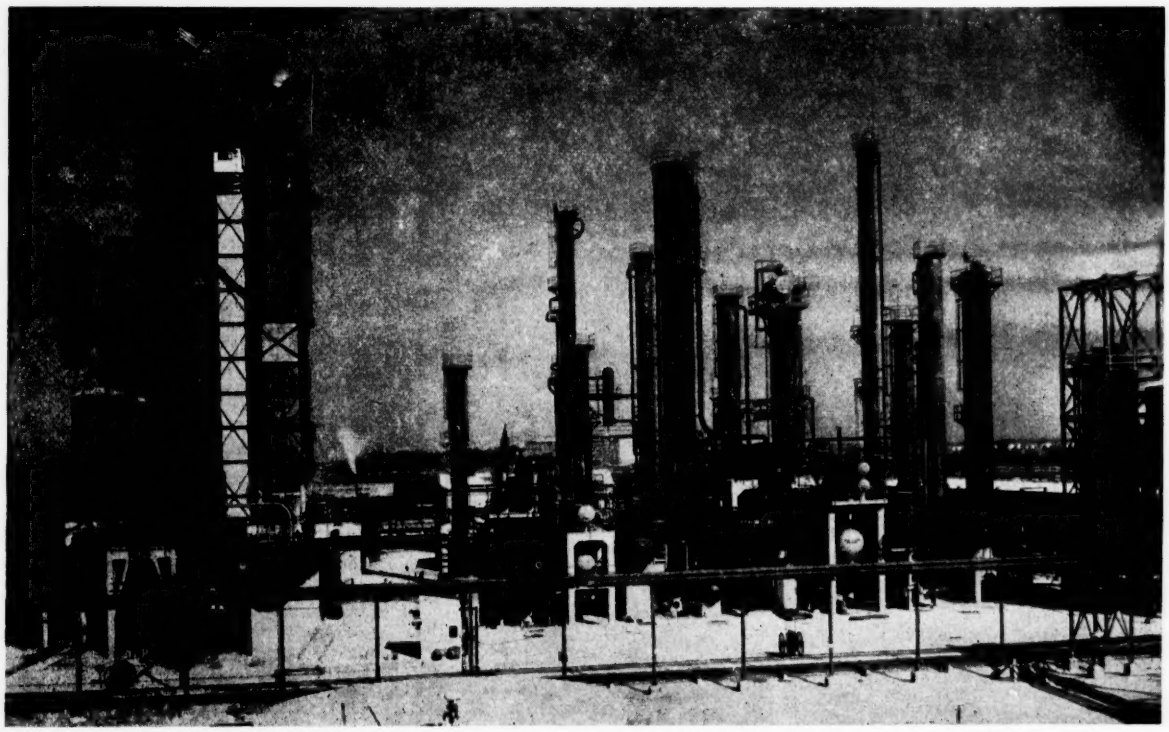
Above—A "cat cracker" at night.

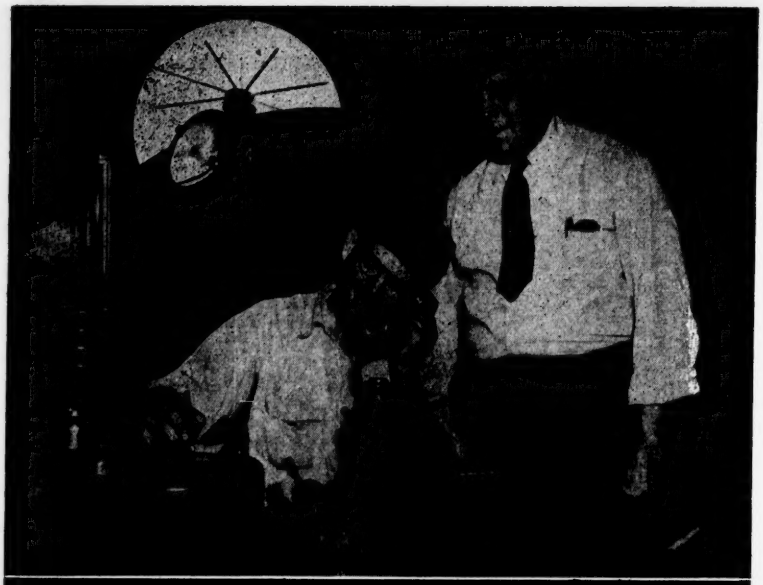
One of these plants forming a part of this program is "Plancor 911" which is located outside of Houston, Texas. It is owned by Defense Plant Corporation, was engineered by Foster - Wheeler Corporation, constructed by The J. G. White Engineering Corporation, and is being operated by the Eastern States Petroleum Company—another example of cooperation of industry together with government assistance.

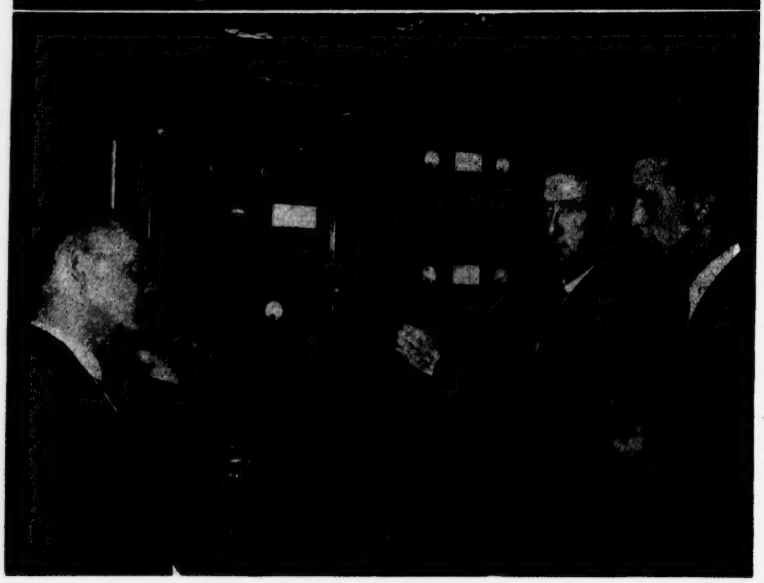
Nearly all 100 octane gasoline is built around the "base stock" which forms the largest part of the blend. In most cases, this is a special naphtha of low end-point which has been formed by means of catalytic cracking. As might be expected, the catalytic cracking unit or "Cat-Cracker," therefore, is the most important

(*Continued on page* 150)

Below—Catalytic cracking unit at left, with isomerization-alkylation unit at right constructed by forces of J. G. White Engineering Corp.







Rail Freight Speeded by Radio Orders

HIGHER railroad terminal operating efficiency is seen as the result of two way radio communication between dispatcher and train crew tested recently in the Baltimore area by engineers of the Baltimore and Ohio Railroad in collaboration with the radio division of Bendix Aviation Corporation.

Designed especially for use in freight car switching, with the immediate goal of expediting war material movement, the new system as integrated with the Baltimore and Ohio dispatching network operates in much the same manner as plane to ground or police radio communication. The frequency, however, is about four times that used by law enforcement agencies.

Two way radio receiving and transmitting sets occupying only a few cubic feet of space have been installed in both the Diesel-electric engine cab and the caboose to allow the engineer and conductor to receive orders from the dispatching office in the Baltimore and Ohio's downtown Camden station.

The transmitting equipment is lo-

(*Continued on page* 156)

Left—Top — Engineer Ambrose Miller receives train order during recent Baltimore test of two-way radio communication for speeding up freight car switching operations. Road Foreman Tom Cavey looks on. The insert shows the antenna installed on the cab of the 1,000-horsepower diesel-electric engine.

Left — Middle — The remote control unit installed in the dispatcher's office at Camden station. Roy B. White, president of the Baltimore and Ohio, and a one time telegraph operator on the road, sent the first train order over the new radio system. The observer is A. S. Hunt, general superintendent of communications.

Left — Lower — The VHF fixed transmitter and receiver unit made by Bendix Radio and installed on the roof of the railroad's central office building. Left to right are S. J. Holland and J. W. Hammond of the Bendix organization, and J. H. Wallis, communications engineer of the railroad.

Montgomery Alabama ★

ENTRANCE TO MODERN TEXTILE PLANT AT MONTGOMERY

—offering elbow room to industry
—excellent distribution facilities
—convenient raw materials
—fair and helpful treatment

THE HEART OF AN INDUSTRIAL REGION WITH OPPORTUNITIES FOR A VARIETY OF ENTERPRISES

When changes are gradual, they often escape attention. "Take stock" today of the New Southeast and learn of the exceptional industrial potentials. New opportunities are being created by modern science. Not fond hopes alone, but realities that are turning possibilities into sound assets, creating wealth and happier ways of living.

•

The spirit of this region is to capitalize upon new opportunities, to uphold the fundamental principles of individual enterprise and to protect private property and interests.

★ *Write for your copy of "Montgomery—Yesterday and Today." P. O. Box 79, Montgomery, Alabama.*

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BOARD OF REVENUE OF MONTGOMERY COUNTY
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H. V. Bell
W. T. Dean
H. C. Gardner
L. R. Grimes

The Revised Price Control Act

by

Hull Bronson

Editor
Industrial Retail Stores

RETAIL store operators have had time to study the revised Price Control Act and to give it a try-out. The new bill, it is widely conceded, eliminates or softens many of the injustices and annoyances of the original Act, yet does not correct them all. That Price Control regulations, as administered by OPA, are not without sins both as to context and application has recently been inadvertently confessed by OPA itself.

One Damoclean sword, dangled over the heads of retailers, innocent and culpable alike, has been removed. It was the old law's harsh levying of liability to suit for overcharges. Under that law the retailer, regardless of how innocent of intent to overcharge, was liable to suit for 3 times the amount of overcharge or $50, whichever was greater.

The courts, under the former Act, had no authority to assess damages according to the merits of the case. Whether the overcharging seller violated the ceiling knowingly or merely was the victim of the ignorance of some inexperienced clerk, could not be considered. Such a violation cost the harassed retailer at least $50 if only on a charge of carelessly accepting 1c more than the ceiling on the sale of a can of beans.

One plaintiff recently brought suit against 3 food chains alleging 104 price violations and seeking $50 in penalties for each, plus attorneys fees, all of which he was legally entitled to under the old statute. Allowing $1,500 for attorneys fees, the 3 chains were liable for a total of $6,700. On these 104 alleged violations the total amount paid in excess of ceiling was $1.92. The plaintiff was charged by the defense with having shopped around in more than 1,000 stores over a radius of 30 miles of his home, deliberately seeking items priced above ceilings, whether by design, ignorance or carelessness, and in some instances with having tricked clerks into accepting a cent or two more than the law allowed. It was one way to make a living.

The new law has less of a malicious sting and more fairness for retailers, most of whom are doing the best they can to obey complex and often puzzling regulations. The new law allows the courts to weigh the degree of intent to overcharge, if any, or the culpable negligence involved, and to assess damages at not more than 3 times the amount of the overcharge or for not less than $25 nor more than $50, whichever of these alternatives is greater. As overcharges in retail transactions are rarely more than $25, the court may thus name damages in any amount between $25 and $50. This revision of the act makes suits by scheming consumers less attractive and eases the threat against retailers.

Hull Bronson

Further, the new law allows the retailer some rebuttal of the allegations, a relief not granted by the original Act. If the seller can establish his lack of intent to overcharge and his observance of practicable precautions, he is liable to merely the amount of the overcharge or $25, whichever is greater. The burden of proof rests upon the seller.

Suits may still be brought by consumers on their own behalf or by OPA if the purchaser bought the questioned item for use in the course of business. But the new bill permits OPA to bring suit when the consumer fails to do so within 30 days of the disputed transaction. A suit or a judgment for damages in such suits bars the recovery of damages from the seller because of sales made to the same complaining purchaser prior to the present action.

The Act, as now revised, in effect also prevents suspension without legal relief of the privilege of buying or selling rationed articles because of failure to observe price regulations. If suspension orders are issued, district courts may set them aside.

Other juridicial means for obtaining relief from or correction of price regulation practices working hardships or injustices upon retailers are present in the new bill. The seller will profit by studying it.

That these changes were justified were indirectly admitted by OPA recently when a cat, big and mangy, was let out of the bag by a lesser OPA department. Six OPA employees, working for a year without fanfare or publicity, had compiled a 55-page "chronological outline of events and situations in OPA history." The assigned task of the six will be completed, it is estimated, 2 years hence when the outline is blown up into an undisclosed number of volumes. The document slipped into the public light when an employee's bulletin, asking one and all to cooperate with the "Historical Records Division," was circulated around the Bureau.

The historians sassed the Boss without mincing words, and as such impertinences are not practiced without the Boss's tolerance it may be assumed the 55-pages sum up OPA's estimation of itself.

One of the assumptions on which

(*Continued on page* 162)

BESSEMER...

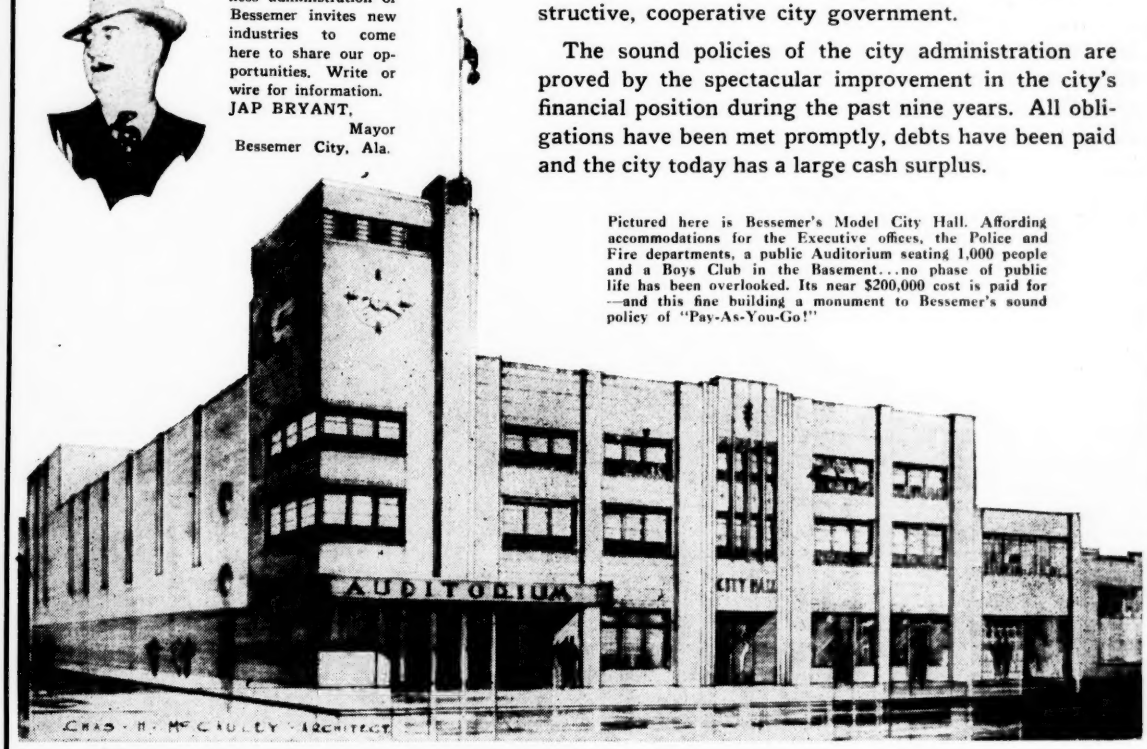
An Invitation—

The progressive, business administration of Bessemer invites new industries to come here to share our opportunities. Write or wire for information.
JAP BRYANT,
Mayor
Bessemer City, Ala.

—offers industry greater advantages than any city in the South. It has an abundance of natural resources, an ample supply of intelligent, native-born labor, good transportation facilities, low power rates and a constructive, cooperative city government.

The sound policies of the city administration are proved by the spectacular improvement in the city's financial position during the past nine years. All obligations have been met promptly, debts have been paid and the city today has a large cash surplus.

Pictured here is Bessemer's Model City Hall. Affording accommodations for the Executive offices, the Police and Fire departments, a public Auditorium seating 1,000 people and a Boys Club in the Basement...no phase of public life has been overlooked. Its near $200,000 cost is paid for —and this fine building a monument to Bessemer's sound policy of "Pay-As-You-Go!"



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Low TVA Power Rates

Bessemer's Electric System was built at a cost of $1,350,000. Twenty thousand kilowatts is available at low cost. Bessemer is the only city which owns its own extensive transmission system under the TVA development.

Plants consuming large quantities of electric power will find a location at Bessemer a distinct advantage.

For further information write today:

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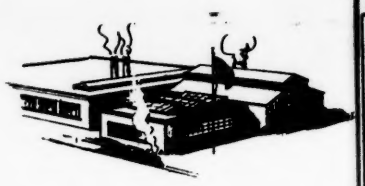
D. J. O'GARA, *Manager* BESSEMER, ALABAMA

Southern Industrial Expansion in July



ALABAMA

BIRMINGHAM— Building — Perusini Construction Co., Inc., has contract at $12,000 for building for Birmingham Spring Service Co.

TROY—Plant—Standard Chemical Co., Inc., will rebuild its sulphuric acid plant, largely destroyed by a tornado last spring.

FLORIDA

FORT MYERS — Dehydration Building — Sullivan Construction Co., Sarasota, has contract for construction of fish dehydration building.

FORT PIERCE — Shipbuilding Plant — South Florida Shipbuilding Co., now in process of formation by R. M. Haynes of West Palm Beach and associates to construct a $6,000,000 shipyard to handle reconversion of wartime ships for post-war commercial usage; a housing project will probably be included.

FROSTPROOF—Plant—Stevens & Sipple, Orlando, has contract for construction of fruit dehydrating plant; Florida Fruit Canners, Frostproof, owner.

GRAPEVILLE—Mill—Adkins and Adkins of Gainesville acquired crate mill; install machinery, including dry kiln.

KEYSVILLE—Mill — Keysville Crate Cooperative, acquired Keysville Lumber Company plant in southern Hillsborough county; property included 125 acres of land, veneer mill, crate mill, saw mill, etc.

MIAMI—Machine Shop—John B. Orr, Inc., 25 N. E. 20th St., Miami, low bidder at $6,365 for machine shop addition for L. D. Llewellyn.

PANAMA CITY—Facilities — Defense Plant Corporation authorized contract with Kilbourn Ice Co., Panama City, for plant facilities in Panama City; $100,000.

GEORGIA

CORDELE— Plant—Rust Engineering Co., Birmingham, Ala., let contract to Red Diamond Milling Co., Cordele, for peanut plant.

MONROE—Freezer Plant—Mayor and council plans freezer locker plant; approximate cost, $25,000.

WAYNESBORO—Locker Plant—Van Winkle & Co., Atlanta, Ga., has contract at approximately $30,000 for freezer locker plant.

KENTUCKY

LOUISVILLE—Equipment—Defense Plant Corporation, authorized contract with Bernhein Distilling Co., for providing equipment to cost approximately $60,000.

LOUISVILLE—Facilities — Defense Plant Corporation, authorized contract with Gasoline Transport Co., for providing transportation facilities; $40,000.

LOUISVILLE—Gas Line—Louisville Gas & Electric Co., applied to Public Service Commission, Frankfort, for permission to construct a 65-mile high pressure gas line from Louisville to Marion county; $886,000.

WINCHESTER—Factory — Leggett and Platt Corp., will operate an assembly plant at Winchester.

LOUISIANA

BATON ROUGE—Plant Addition—Leonard Construction Co., Chicago, Ill., has contract for construction of an addition to sulphuric acid plant for Consolidated Chemical Industries, Inc.

PONCHATOULA—Power Line — War Department authorized construction of an electric line from Ponchatoula to Pass Manchac for the electrification of the Illinois Central Railroad and the Louisiana State Highway bridges; line will be 11 miles long and carry a voltage of 7,700.

SHREVEPORT—Expansion—The Brewster Co., Inc., acquired 8 acres in industrial section of Augurs section for expansion.

SHREVEPORT—Plant — Werner Co. has contract at $227,920, for shell machining and forging plant for J. B. Beaird Corp.

MARYLAND

BALTIMORE — Alterations — Davis Construction Co., 9 W. Chase St., has contract for alterations to manufacturing building, for American Can Co.; cost $10,000.

BALTIMORE—Boiler House — Baltimore Contractors, have contract for one-story cinder block boiler house, for Brooklyn Chemical Works, Inc.; $10,000.

BALTIMORE—Buildings — Baltimore Contractors, have contract for four masonry and steel buildings, for Southern States Co-operative, Inc.; $100,000.

BALTIMORE—Expansion — Defense Plant Corporation authorized execution of a contract with The Davison Chemical Co., to provide equipment at a plant in Baltimore at a cost of approximately $65,000.

BALTIMORE—Machinery — Holtite Manufacturing Co., Baltimore, has contract for provision of machinery and equipment at plant in Baltimore; $360,000.

BALTIMORE—Pens — Consolidated Engineering Co., has contract for livestock unloading pens, at $15,000.

BALTIMORE—Plant — National Gypsum Co., Buffalo, New York, plans gypsum processing plant in the Canton section of Baltimore harbor; city to construct $1,000,000 pier to serve the plant under terms of Port Development loan.

ELKTON—Plant — Frank H. Wilson, Ardmore, Pa., low bidder at $185,745 for mixing and pelleting area for Triumph Explosives, Inc.

HALETHORPE—Plant — Defense Plant Corporation increased its contract with Revere Copper & Brass., Inc., New York, to provide additional plant facilities at Baltimore; $950,000, resulting in an overall commitment of approximately $7,750,000.

MISSISSIPPI

GULFPORT—Addition — Barge-Thompson Co., Atlanta, Ga., has contract for reconstructing second-story addition to telephone building for Southern Bell Telephone Co., cost, $35,000.

MISSOURI

KANSAS CITY—Expansion—Standard Oil Co., plans expansion at its Sugar Creek refinery facilities by eighty-five acres.

KANSAS CITY—Storage Elevator—National Distillers Corp., constructing grain storage elevator, containing 8 grain storage bins with capacity of 60,000 bu. and costing, $235,000.

ST. LOUIS—Building — A. H. Haeseler Building and Contracting Co., has contract for four-story cooler building for Swift & Co., Union Stock Yards, Chicago, Ill.; $50,000.

ST. LOUIS—Conversion—St. Louis Amertorp plant of the American Can Co., plans conversion to a can manufacturing plant.

ST. LOUIS—Expansion— St. Louis Ordnance District awarded a $25,000,000 contract to General Motors Corp., Chevrolet Motor Division, for production of 105 millimeter howitzer shells in 5 buildings; $17,000,000 of the contract will be used for equipment and expansion, remainder for production; 3 of the 5 buildings will be used for manufacturing and 2 for housing of administrative personnel; in addition army engineers will construct a forge building for the Chevrolet Co. with Ordnance Department funds amounting to $5,000,000.

NORTH CAROLINA

CHARLOTTE—Expansion—H. & S. Lumber, plans post-war development of property it has occupied on lease, but which was recently purchased.

DURHAM—Locker Plant — Quick-Freeze Locker Co., plans erecting quick-freeze locker plant.

GREENVILLE—Plant — National Carbon Co., has building, will install equipment and make alterations for plastic products.

NEW BERN—Locker—M. L. Lupton, erect freezer locker.

SHELBY — Building — Carolina Dairy, granted priorities by WPB for immediate construction of $56,000 plant.

SHELBY—Plant — Ohio Construction Co., Dave C. Webb, plans establishment of plant.

OKLAHOMA

Pipeline—Stanolind Pipe Line Co., Tulsa, awarded contracts for construction of 40 miles of 16-inch loop on its main pipeline system between Drumright and Blake station and Havana in northeastern Oklahoma and Southeastern Kansas.

HOLLIS— Electric Lines—Sandford Construction Co., Oklahoma City, has contract at $51,644 for construction of extension to rural electric lines.

OKLAHOMA CITY— Power Line — Oklahoma City Gas & Electric Co., filed application with WPB for construction of high voltage power line into the West Edmond oil field, first link to extend from near Britton; survey made for further extension.

SOUTH CAROLINA

BENNETTSVILLE—Locker—W. S. Reamer, Columbia, has contract at $35,000 for construction of abattoir and freezer locker, for Marlboro Electric Refrigeration, Inc., owner.

CAMDEN—Plant—Kershaw County branch of South Carolina Farm Bureau and members of the Camden City Council, plan freezer locker plant of 500 units, together with abattoir and poultry dressing units.

COLUMBIA—Station—Federal Communications Commission, received application from Inter-City Advertising Co., for permit to build new 250 watt standard broadcasting station.

EDGEFIELD—Abattoir & Freezer Locker Plant—W. S. Reamer, Columbia, has contract at $40,000 for construction of abattoir and freezer locker plant.

GREENVILLE—Addition — Gaylord Container Corporation has approval of War Production Board for constructing an addition to plant, doubling present size.

SENECA— Plant — Seneca Food Processing Co.; capital, $35,000; Sara D. Stribling, Sec.; to process food and operate a frozen locker system.

YORK—Locker Plant—W. S. Reamer, Columbia, has contract at $25,000, for construction of turkey freezer locker plant.

TENNESSEE

MEMPHIS—Cement Plant — Missouri Portland Cement Co., St. Louis, Mo., plans construction of $2,500,000 cement plant. Annual capacity 750,000 bbls.

MEMPHIS—Chemical Plant—H. K. Ferguson, Cleveland, Ohio, has contract at $330,000 for construction of expansion of chemical plant at Memphis; Southern Acid & Sulphur Co., owners. Defense Plant Corp. authorized increase in its contract with Southern Acid & Sulphur Co., Inc. to provide additional facilities Warford Ave. plant; cost $330,000, overall commitment of $2,930,000.

MEMPHIS—Expansion—E. L. Bruce Lumber Co., Thomas St., acquired 8 acres adjoining present plant for future expansion.

NASHVILLE—Building — V. L. Nicholson Co., Nashville, has contract for $1,000,000 cold storage plant, for operation by Polar Cold Storage Corp.

TEXAS

DALLAS — Plant — War Production Board granted Merchants Cold Storage Co., authority to construct a $155,000 addition to plant at Broom and Yate Streets; capacity 300 carloads or about 12,000,000 lbs., of frozen food.

DALLAS—Plant Addition—Cedrick Burgher Construction Co., Dallas, has contract for expansion to present cold storage plant; $200,000.

EDINBURG — Cold Storage Plant — Valley Weathermakers, Harlingen, has contract for cold storage plant for C. R. Fitzpatrick, Edinburg; cost $25,000.

FORT WORTH—Addition—L. G. Bundock, has contract for creamery addition; Alta Vista Creamery.

GALVESTON—Acetylene System—Swanson Plumbing and Heating Co., Houston, has contract at $50,000 for constructing oxygen acetylene system underneath docks; private plans; Todd Shipbuilding Corp., Galveston, owners.

HOUSTON—Addition — Bace-Marshall Co. low bidder at $51,270 for addition to plant, for Southwest Wheel Co., Inc.

HOUSTON—Facilities—Defense Plant Corporation authorized contract with Sheffield Steel of Texas, Division American Rolling Mill Co., Houston, to provide plant facilities in Houston to cost approximately $450,000. W. S. Bellows Construction Co., submitted low bid for constructing slag crushing plant for Sheffield Steel Co.

HOUSTON—Plant — J. Oostermeyer, executive vice-president of Shell Chemical Division of Shell Union Oil Corporation, announced that the War Production Board has authorized construction of an allyl chloride and allyl alcohol plant at Houston, Texas.

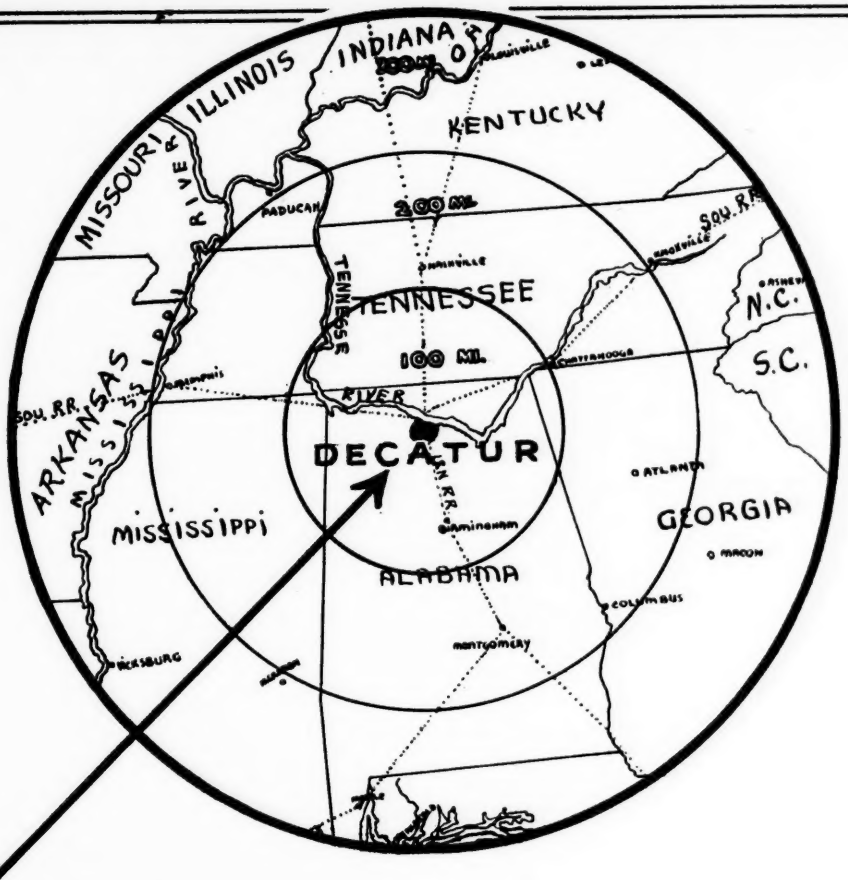
McALLEN—Plant—H. B. Swedlund & Son, Weslaco, have contract for addition to packing plant for McAllen Citrus Association; cost $75,000.

MISSION—Plant—H. B. Swedlund & Son, Harlingen, general contractors, for citrus packing plant for Mission Citrus Growers Union, cost $135,000.

VIRGINIA

BEDFORD—Plant—E. T. Sink, of agricul-

(*Continued on page* 148)



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MUNICIPAL UTILITIES BOARD
DECATUR, ALABAMA

Industrial News

Porter Acquires Fort Pitt Steel Casting Company

H. K. Porter Company, Inc., of Pittsburgh, Pa., have purchased Fort Pitt Steel Casting Company, of McKeesport, Pa., manufacturers of pressure and alloy steel castings. Founded in 1906, Fort Pitt is one of the largest single units in the country producing electric steel castings, having a capacity of 1,500 tons per month. It has made a specialty of high-test alloy steel products.

Since the war, the company has three times been awarded the Maritime Commission pennant for outstanding production.

T. M. Evans, president of Porter, stated that present policies and management of Fort Pitt would continue the same as in the past under the leadership of Fred Grotts, president. The acquisition of Fort Pitt brings to six the number of complete industrial plants operated by Porter in the manufacture of process equipment, locomotives, freight cars, pumps and ordnance material.

New Allis-Chalmers Appointment

Howard C. Herbert has been appointed a field engineer by Allis-Chalmers for steel mills in the Pittsburgh district. Mr. Herbert was formerly Pittsburgh representative of the I-T-E Circuit Breaker Co. He also has been employed in the engineering departments of the Carnegie-Illinois Steel Corporation and the Gulf Refining Company.

More Iron, Steel Scrap Stocks Reported by Mines Bureau

Stocks of iron and steel scrap at plants of consumers, suppliers and producers at the end of May 1944 approximated 5,966,000 gross tons, an increase of nearly 1 percent over the 5,932,000 tons reported on April 30, 1944, according to a statement released by the Bureau of Mines, United States Department of the Interior. Consumers' stocks on May 31 amounted to 4,794,000 tons, compared with 4,768,000 tons at the end of April, while the combined stocks of suppliers and producers were 1,172,000 tons and 1,164,000 tons, on the same dates. An increase of 42,000 tons in stocks of home scrap held by consumers was the major factor in the gain in total stocks, since consumers' stocks of purchased scrap declined 16,000 tons, while suppliers' and producers' inventories increased 8,000 tons. This increase in total inventories is the first since June, 1943, with the exception of the month of December 1943.

Hovey of WPB Warns Paper Industry

The paper industry is faced with complete priority control of paper by the War Production Board, or will be subjected to over-all directives by the Army, unless the entire industry voluntarily cooperates in producing military and essential civilian papers, Rex W. Hovey, Director of the Paper Division, War Production Board, said recently.

Hospital Ship has Twelve Ventilation, Air Systems

Five million dollars worth of comfort has been built into the Army's new hospital ship, the U. S. S. Marigold, formerly the liner President Wilson.

Army engineers who directed the Marigold's conversion put the comfort and welfare of battle casualties ahead of all other considerations and equipped the ship with twelve separate ventilating and air-conditioning systems. In this way they have insured the comfort of both patients and crew.

Temperature and humidity in patients' and crew's quarters are regulated by equipment manufactured and installed by the Johnson Service Company of Milwaukee, Wis., manufacturers of the Duo-Stat and other temperature and humidity control systems.

Four other new hospital ships are being fitted with the same type of equipment. It was a technical problem of considerable proportions to adapt "skyscraper" heat and temperature regulation to shipboard use, but Johnson engineers found the solution, making the burden of war a bit lighter for those who carry it so valiantly.

Pollister Retires from Busch-Sulzer

Edward B. Pollister, for many years President of Busch-Sulzer Brothers Diesel Engine Company, St. Louis, recently retired that he might take a much needed and complete rest from active work. He is succeeded by Norris H. Schwenk, formerly with the Baldwin Locomotive Works, Eddystone, Pa.

Hackett Joins Porter-Blairsville

S. E. Hackett has joined Porter-Blairsville Co., Blairsville, Pa., a division of H. K. Porter Company, Inc., of Pittsburgh, Pa., as vice-president in charge of production. Mr. Hackett was formerly president of the Jones & Laughlin Steel Corp., being associated with the corporation for 20 years until he retired in 1938.

SWPC Aid for Small Industries

Smaller War Plants Corporation, Washington, D. C., has issued a booklet outlining the services the corporation is prepared to render the small manufacturer in need of research aid, technical advice, news on available materials and substitute materials, markets for waste materials, patents and other problems that may confront him. Manufacturers wishing to avail themselves of the corporation's services should address Technical Advisory Service, SWPC, HOLC Bldg., 1st and Indiana Ave., Washington 25, D. C.

Box Wiring Portfolio

New instruction charts, designed to save time in the shipping room, are now being distributed by the General Box Co., of Chicago. The charts are in attractive portfolio form and show the simple steps necessary to assemble and close all types of General wirebound crates.

Appeal to Inventors

The National Inventors Council of the Department of Commerce has repeated its call to all Americans to turn in ideas of potential value to the war effort to the Government. Formed in 1940 for the purpose of encouraging the public to submit inventions or ideas that might contribute to the effectiveness of the armed forces, the council has received some 200,000 ideas since its organization. A staff of engineers and a system of technical committees are maintained by the council to evaluate these contributions and, if they are believed to have merit, to put them in the hands of proper authorities.

The council is composed of outstanding American inventors, scientists and industrialists, all of whom have had wide experience in the development and utilization of inventions.

No Civilian Radios Available

Contrary to published reports, the War Production Board has not authorized the production of any new radio receiving sets for civilians and there is no prospect of such authorization this year, the Radio and Radar Division of WPB said recently. Production of radio receiving sets for civilians has been prohibited by WPB since April, 1942. The military electronics equipment program for 1944 is approximately 50 per cent above 1943 production, the Radio and Radar Division pointed out, so the prospect of resumption of civilian radio set production is remote.

The "Weasel"

A new type military vehicle in secret production by the Studebaker Corporation, South Bend, Indiana, for nearly two years was announced July 6 for the first time by the Ordnance Department of the Army Service Forces.

Propelled by a special rubber track, designed and developed in Akron, Ohio, by the B. F. Goodrich Co., the vehicle known as the "Weasel" is declared capable of operation over a greater variety of terrain conditions than any other now in service including snow, deep mud, swamp land, sand or paved highway.

Key to the "Weasel's" ability to roll over surfaces impossible to conventional wheel or other track-laying vehicles, is its light weight combined with broad tracks which extend the full length of a low-slung body. The vehicle used as personnel and cargo carrier for arctic reconnaissance or commando raids seemingly "skims" along the ground like its animal namesake, exerting ground pressure only about one-fourth that of a fully-equipped infantryman.

Air Circuit Breaker

A new "Ruptair" magnetic type air circuit breaker has been developed by Allis Chalmers Manufacturing Co., of Milwaukee, Wisc. In the new device the arc chute has been coordinated with the contact and arc runner design to give consistent and reliable interruption through the entire range of current to be interrupted. The magnetic circuit consists of one blowout coil and two laminated iron pole pieces per phase and is arranged to force the arc up into the arc chute as soon as the arcing contacts separate. The "Ruptair" is available in high voltage, oil-less switchgear rated 5,000 volts and below and 150,000 kva interrupting capacity and under.

Ipco Safety Jacket

The Ipco Safety Jacket, in its black and white checkerboard design offers high visibility day and night, and distinctly marks a man, no matter at what point or under what conditions he is operating, as one who is engaged in the performance of such duties as helpers at open manholes, track workers, emergency railway crews, railroad crossing watchmen, switchmen, night patrolmen, directors of traffic and all locations where men are working in hazardous locations and must be seen. The jacket is designed in the form of a vest, patterned large enough to fit over regular clothing and ample room for performing work in a normal manner.

"Mity Midget" Sander

National Air Sander, Inc., 2712 West State Street, Rockford, Ill., has developed the "Mity Midget," described as a small high speed non-stalling block sander that is flexible, light in weight and compact, with a "no-vibration" feature, fast easy paper loading, adaptable for operations in close quarters and fillet work and for wet and dry sanding.

Marmon-Herrington Underwrites English-Chinese Automotive Dictionary

Marmon-Herrington Co., of Indianapolis, Ind., builders of all-wheel-drive automotive vehicles, has underwritten an English-Chinese automotive dictionary.

Books of technical terminology are few in China. Until now, there has been little standardization of Chinese automotive terms, and no organized translation of any great number of American names and terms into the Chinese language. The new book which consists of 252 pages, lists almost 10,000 automotive and related terms and phrases, with their Chinese equivalents. It will prove particularly valuable to the military forces operating in China while the war continues, and to governmental and civilian transportation organizations in the reconstruction period when peace returns.

The new dictionary has been in course of preparation for over a year. The task of research, compilation of names and terms and the translation into Chinese has been done by Calvin C. Chang, with the cooperation of C. Alfred Campbell, vice-president of the Marmon-Herrington Co. After translation, the Chinese words and characters were inscribed by Mr. Chang by hand for photo-

(*Continued on page* 156)

NATURAL GAS SERVICE

is available throughout a wide area in ALABAMA, MISSISSIPPI and GEORGIA.

The ideal fuel for precision heating operations in armament manufacture. This and other essential services now have priority.

Ask your local gas company about the NEW automatically controlled gas fired unit for HUMIDIFIED WINTER HEATING and DEHUMIDIFIED SUMMER COOLING.

Standard units for homes, stores, restaurants.

Plan now for post-war year-round comfort, meanwhile, BUY WAR BONDS.

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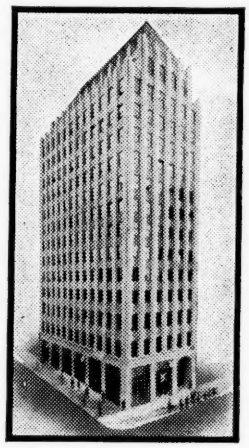

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TOTAL INSURANCE IN FORCE EXCEEDS

$190,000,000.00!

Hundreds of Southern industrial companies have provided Protective Life's group protection for employees and their families. The employees pay the entire cost, receiving in return cash benefits for death, accident, sickness, hospital and surgical expense. Write for details.

Protective Life Insurance Company is one of the FASTEST GROWING and financially one of the STRONGEST LIFE INSURANCE COMPANIES IN THE UNITED STATES. Its total assets now are over $19,000,000.00

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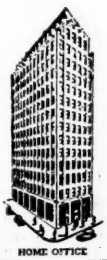

HOME OFFICE

WILLIAM J. RUSHTON
President

BIRMINGHAM
ALABAMA

TRADE LITERATURE

And Related Publications

PROCESSING OF SYNTHETIC RESINS

Bulletin 4404 of The Hydraulic Press Mfg. Co., Mount Gilead, Ohio, is prepared especially for those postwar planners who are considering plastics. Written in a manner that can be easily understood by those with little or no association to the plastic industry, it describes materials, processes and equipment for most types of plastic product production.

PLANNING POSTWAR PRODUCTS

Two of the major postwar problems with which business must deal are "what to make" and "when and how to sell it" in the postwar period. The effectiveness with which these problems are solved will go a long way in bringing postwar employment to record peacetime levels. What 47 companies, now wholly or partially engaged in war work, are doing to achieve these results is the subject of the new study "Planning Postwar Products and Markets" prepared by the Policyholders Service Bureau, Metropolitan Life Insurance Company. A copy of this report is available to executives who request it on their business stationery. Address: Policyholders Service Bureau, Metropolitan Life Insurance Company, 1 Madison Avenue, New York 10, N. Y.

V-BELT AND SHEAVE BULLETIN

Each of the various V-belts, sheaves and drives in what Allis-Chalmers describes as the widest and most accurately calibrated line of V-belt drive equipment ever developed is described in a new quick-picture bulletin just released by the company which invented the multiple V-belt drive. The new type Allis-Chalmers Magic-Grip Sheave and the four speed changing methods used in Allis-Chalmers sheaves are also described in the new bulletin. Available from Allis-Chalmers, Milwaukee 1, Wisconsin, it is bulletin B6331.

HYDRAULIC TORQUE CONVERTERS—

Function operation and installation of "Hydraulic Torque Converters" are discussed in a 16-page booklet published by the Twin Disc Clutch Co., Racine, Wis., and Rockford, Ill.

NEW REAMER CATALOG—

A new Catalog, No. 44, has been issued by Wetmore Reamer Co., 418 N. 27th St., Milwaukee 8, Wis., covering their complete line of adjustable, inserted blade reamers, boring bars and special tools. Profusely illustrated, it contains other data and information useful to production executives and tool engineers.

CHEMISTS CLASSIFIED DIRECTORY—

The Eighth edition of the Classified Directory of the Association of Consulting Chemists and Chemical Engineers, 50 E. 41 St., New York 17, N. Y. is now available on request to the Association. The directory will be of usefulness to those frequently in need of specialized consultants in the chemical field.

"The Liquidation of War Production"

By A. D. H. Kaplan, well-known University of Denver economist and consultant to the House of Representatives' Special Committee on Postwar Economic Policy and Planning.

One of the crucial periods in our economic history will come during the transition from war production to peacetime manufacturing, and the speed with which the transition is accomplished will have a vital bearing on our ability to attain and maintain high levels of employment and production.

In his book Dr. Kaplan has analyzed the nature and scope of the problems that confront us. Factors that will have to be given the greatest emphasis are pointed out, and the responsibilities that will fall on business as well as government are clearly delineated.

With the basic objective "to put productive enterprise in a physical and financial position to re-tool, to replenish its stock, to open up new lines in commodities and services, and thereby to re-employ labor at wages that will sustain the nation's purchasing power," Dr. Kaplan presents 41 specific points that will enter into any program adequate to meet the problems of war contract cancellation, war plant and surplus disposal.

A research study of the Committee for Economic Development, the book is obtainable from McGraw-Hill Publishing Co., $1.50.

Industrial News

English-Chinese Dictionary

(*Continued from page* 124)

graphic reproduction. The work represents many months of painstaking toil.

Mr. Chang became associated with the Marmon-Herrington Company early in 1942. He completed a course of training in the Company's tank school, later gained experience in the Service-Technical Division and is now connected with the Public Relations Division. Chinese authorities and technicians in this country and American experts on Chinese matters have taken a great interest in the preparation of this book of nomenclature. It has the endorsement of prominent Chinese officials in this country and has been reviewed in detail by George B. Fraumann, Technical Adviser on motor-transport requirements of China Defense Supplies, Inc., and by John K. J. Kang, a Chinese automotive technical expert.

The book will be distributed free by the Marmon-Herrington Company to Chinese engineering students and engineers in America and to the Chinese Government for distribution in China. A quantity will be donated to United China Relief for sale by that organization in raising funds. It will also be distributed to the libraries of colleges, states and other cultural institutions in both the United States and Canada.

Iowa Issues Booklet

"With the advent of good roads campaigns throughout the nation, we started to build crushing equipment. At that—as today—we made a pledge—that nothing short of the best would ever carry the Cedarapids name." That is the opening statement of Howard Hall, president of the Iowa Manufacturing Co., of Cedar Rapids, Iowa, in a newly published outline of the growth of his organization from a small building to the plant which today employs over 1,800 workers.

"Twenty-five years ago," the attractively illustrated booklet reads, "the doors of a new business opened in the heart of Iowa's tall corn. Over a small building out on 16th St., there appeared a new sign, the Iowa Manufacturing Company, manufacturers of crushing, screening and conveying machinery.

"'Vote for good roads,' was the slogan in those days. The motor car had begun its influence and people had found in it a new lower cost way to 'go places,' and a new note that foretold the great influence that good roads would have on business was in the air.

"Like most great growths, the Iowa Manufacturing Co. began with an idea. Roads, of course, couldn't be built without aggregate, and the process of producing aggregate at this period was a slow disjointed business requiring many uncoordinated units that could be moved only with great labor and at great cost.

"The idea developed into engineering and, when the engineering came off the boards, contractors and highway departments for the first time had a crushing, screening and loading plant that was really portable. Here was developed what we called an O. P. O. plant—the first real One Piece Outfit."

Illustrations in the booklet show the first One Piece Outfit and how it passed through the refinement stage, how the vibrating screen replaced the rotary screen, how the tandem plant was developed with a flat vibrating screen and how the "Morok" crusher and the Master Tandem evolved from the other advances made in crusher design.

The forty pages inside the booklet's covers trace the accomplishments and operations of the company's past, what it is now doing and what the future holds. "The picture of construction for the future is being formed. The needs of the nation are enormous. Highways, superhighways, dams, bridges, airports—a vast multiplicity of every kind of construction is going to be asked for by the public.

"Aggregate is the beginning of all construction, whether it is for the highways and skyways of tomorrow or whether it is for the unromantic foundation of a sewage disposal plant, and Iowa has developed, designed and built with this fact always in mind. Iowa had but one plan—to build the finest portable crushing plant that experience and advanced engineering could produce."

Fields served by Iowa machines are asphalt, highways, quarries, mining, railway, industrial, export, aggregate, municipal, airways, the army and navy and lend-lease. "Tomorrow we go places—you—the public about its business and enjoyment—over roads Iowa helped to build—from airports Iowa helped to build! We too live toward the realization of a continuous dream—to build better Iowa equipment with which to build better roads and airports." So ends the message.

Compressors and Vacuum Pumps

Ingersoll-Rand Co., Phillipsburg, N. J., announces a new 32-page catalog of compressors and vacuum pumps in sizes from ½ to 10 horsepower. This bulletin covers the well-known Type "30" line of air-cooled machines with two notable additions, a 3-stage dual-pressure portable and two 3-stage high-pressure units. The dual-pressure portables are designed particularly for use at airports in the servicing and repairing of airplanes.

They may be operated either at 80 to 100 lb. discharge pressure or 1,600 to 2,000 lb., the manipulation of a single valve changing from one pressure range to the other. The high-pressure units are 8- and 4-cylinder machines producing discharge pressures of 3,000 lb. and 2,000 lb. respectively and are designed for special industrial uses requiring such pressures for intermittent operations.

There are six pages of installation views showing various applications. The table of contents is ingeniously arranged in the form of a chart which enables the reader to select the proper compressor for a given pressure and capacity. A number of cross-sections are given to show construction details and there are three pages of accessories and special purpose units. A few paragraphs are devoted to a brief resume of the company's 70-year compressor experience, their large, modern plant, and their service facilities.

The catalog may be had by writing the company at 11 Broadway, New York 4, N. Y., or one of its branches, for Form 1502.

Master Vibrator Company Announces Most Complete Line of Vibrator Equipment

The latest additions to the line of the Master Vibrator Co. is the Master Vibratory concrete finishing screed. This new piece of equipment has proven to be a real money and time-saver for the contractor. The vibratory screed strikes off accurately, compacts and leaves enough mortar on top for an easy job of final finishing. It has capacity up to 6,000 square feet per hour and has on many jobs cut finishing costs more than 50%, and at the same time producing a more accurate floor than heretofore thought possible.

The vibratory concrete finishing screed is a self contained unit that is powered with 1½ h.p. or a 3 h.p. gasoline engine. It is furnished in the following lengths: 6 ft., 10 ft., 13 ft., 16 ft., 20 ft., 25 ft., and 26 ft. All sizes are adjustable down to the following minimum lengths, except 6 ft. down to 2 ft, 10 ft.

(*Continued on page* 166)

YOUR SHIPMENTS are IMPORTANT

Whatever their destination... **CLEAR ...EASILY READ...PERMANENT STENCILLED ADDRESSED SHIPMENTS** will help to speed and insure their delivery on time. Diagraph-Bradley non-settling, non-clogging stencil and marking inks have been developed through 50 years of research to do the best job of marking for you.

DIAGRAPH-BRADLEY STENCIL CUTTING MACHINES FOR CUTTING LETTERS
½", ¾", ⅞", 1¼", 1½" and 1¾" HIGH
Most export shipments require 1½" letters, or larger

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DIAGRAPH-BRADLEY STENCIL MACHINE CORPORATION
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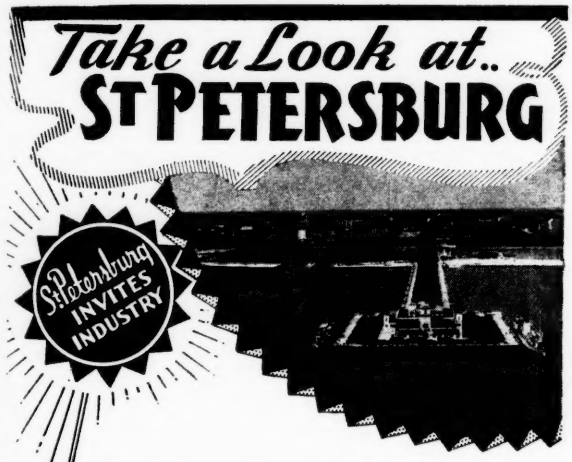
WORLD'S OLDEST AND LARGEST MANUFACTURER OF STENCIL MACHINES

Take a Look at.. ST PETERSBURG



While you are engaged in post-war business planning, it will pay you to investigate the opportunities offered by St. Petersburg, Florida, the dynamic "Sunshine City." This community, second largest resort center of the South, is also interested in attracting and developing light industries. Many advantages in markets, materials, labor, and living conditions combine to make St. Petersburg particularly attractive for certain types of selected industries. For booklet, "St. Petersburg Invites Industry," write J. M. Davenport, Chamber of Commerce, St. Petersburg, Florida.

ST PETERSBURG *Florida*
THE SUNSHINE CITY

There's Opportunity in ORLANDO

After the war Florida will be the opportunity state of America, and Orlando is the opportunity center of Florida. This community of some 60,000 population is located in the center of the Sunshine State, accessible by train, plane and highway to all raw materials and leading markets of this area. Favorable living conditions. Moderate living costs. For statistical data and special information, address Greater Orlando Chamber of Commerce, 152 Chamber of Commerce Building, Orlando, Florida.

OPPORTUNITY CENTER OF
FLORIDA

● "That fire would have ruined me as completely as it did my plant, if it hadn't been for my insurance agent. He recognized the steadily rising value of my property and equipment and only recently made a new survey, resulting in coverage from many angles that never occurred to me. Thanks to his intelligent services, I was able to meet my regular payroll, hold my men, and also cover production losses during the period of shutdown. The prompt service of the United States Fire Insurance Company's adjusters permitted me to take over this new location, and we are operating again—will soon be back to peak production. Now I know the value of a good insurance agent backed by a high grade company. It certainly pays to review insurance requirements with insurance people."

120 years of fair dealing by the Agents, Adjusters and Personnel of the United States Fire Insurance Company has made loyal friends of many policyholders and claimants.

UNITED STATES FIRE
INSURANCE COMPANY
ORGANIZED 1824
NEW YORK, N. Y.

Virginia Maintains 47,000 Miles of Roads

by

R. P. Ellison

VIRGINIA, with some 47,000 miles of roads to maintain, has left no stone unturned in her endeavor to meet the ever increasing problems of shortages of manpower, material, equipment and equipment repair parts. As perhaps was the case in all states, the initial problem and the one which occurred most sharply was the shortage and consequent strict rationing of materials.

Included within the 47,000-mile primary and secondary highway systems, Virginia has 15,400 miles of bituminous surfaced roads. In normal years, approximately 21,000,000 gallons of asphalts and tars were used for ordinary maintenance and resurfacing purposes. Abrupt curtailment of the use of bituminous material in April of 1942, by virtue of PAW Order 45, made necessary a drastic revision of former practices.

A minute re-inspection of all bituminous surfaced roads was made and it was immediately decided to eliminate heavy drag and pre-mixed retreads on all except some very short sections of the strategic network and to eliminate even light retreatments on all roads which inspection indicated could be carried through the year by patching. By these measures, Virginia reduced use of bituminous materials from 21,000,000 to 7,000,000 gallons during the year ending in June 1942 and to 10,000,000 gallons in the year ending in June 1943.

Virginia roads are not quite so smooth as before the war nor are they quite so strong. Yet, they are still standing up remarkably well and it is hoped that a moderate winter and the lifting of the restrictions on the use of asphalts and tars will enable Virginia to pass the crisis of the materials shortage.

Restrictions imposed upon the purchase of new equipment and equipment repair parts were almost as abrupt as those imposed upon materials and called for fully as drastic revision of former practices.

Virginia owns and operates equipment with a replacement value of over $5,500,000. It had been customary to make annual replacements of such of that equipment as had become obsolescent through age and wear. The problem was almost literally to make equipment outlive its service life.

A metallizing machine was secured. Shaftings, dipper teeth, crusher jaws and many other vital parts have been re-

(*Continued on page* 130)

Unusually

Heavy Trusses

Electric Arc Welded

Over the Auditorium of the
George Washington Hotel
Jacksonville, Florida

BETTER CONSTRUCTION
AT LOWER COST

• • •

THE AETNA STEEL CONSTRUCTION CO.
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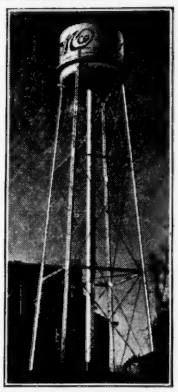

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We now manufacture and offer to the trade tanks in all sizes for pressure or gravity work. Also other steel equipment of either

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This applies to field as well as shop built equipment

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LUNKENHEIMER VALVES *Spell* "Low Maintenance"

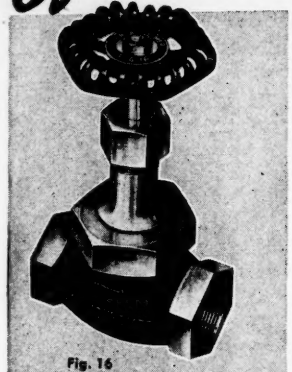

Fig. 16
"Renewo" Globe

Long service life and low maintenance have ever been the goal of Lunkenheimer design. Ask users why they prefer Lunkenheimer Valves and their answer is universal—"they're built to last and give the least amount of trouble."

These staying qualities are particularly important when production is running at previously unheard-of tempos — when "time out" is figured in loss of vitally needed equipment, rather than mere dollars. Lunkenheimer Valves are helping many a maintenance crew do a better job.

Illustrated are just a few of the many types of valves in the Lunkenheimer line —bronze, iron, steel and corrosion-resistant alloys—for all prevailing pressures and temperatures.

Your Lunkenheimer distributor is always ready to help you with your maintenance, repair and operating problems. His facilities are at your call.

Fig. 1640
"King-clip" Gate

Fig. 2125
Bronze Gate

ESTABLISHED 1862

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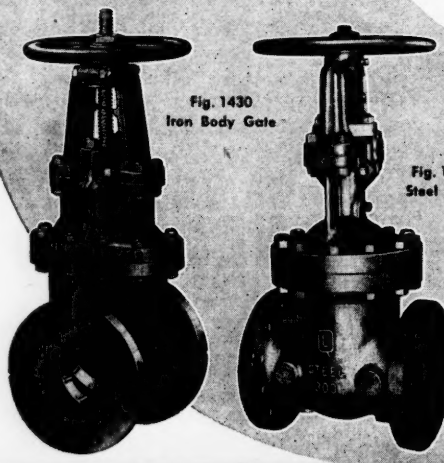


Fig. 1430
Iron Body Gate

Fig. 1938
Steel Gate

Fig. 123
"N-M-D" Globe
(Non-Metallic Disc)

BRONZE, IRON, STEEL AND CORROSION RESISTANT ALLOY VALVES, 125 TO 2500 LB. S.P.; BOILER MOUNTINGS, LUBRICATING DEVICES, AIRCRAFT FITTINGS

28—114C—62

Virginia Highway Maintenance

(*Continued from page* 128)

stored to usefulness by the metallizer. Batteries and radiators, formerly assigned to the junk heap, have been rebuilt. Bands have been installed on roller and grader wheels, and worn and broken grader blades have been welded. By these and many other methods, Virginia is making her equipment last. The Equipment Division has also installed an oil reclaimer, enabling purchases of new oil to be reduced thirty-three per cent, cost of reclaimed oil being only one-third that of new oil.

The manpower shortage, although not occurring abruptly, has acted like creeping paralysis and, like that dread disease, increasingly threatens the essential functioning of the entire highway body. Fortunately, indeed, this shortage could be at least partially foreseen, thus enabling the Highway Department to plan and organize accordingly.

Prior to the war and the ban on all but the most essential construction, Virginia utilized about 2,000 convicts, in from seventeen to twenty semi-mobile prison camps, on new highway construction. For the most part, convicts were used in the mountainous areas of the State where grading was heavy and stone was quarried for macadam surfacing.

As the manpower shortage first became acute in the Hampton Roads and Arlington areas and every available man and woman resident therein became employed on government projects, camps were moved to those areas and convicts used on maintenance instead of construction. On all other convict construction projects, instructions were issued to utilize as many convicts as possible on maintenance work within a reasonable travel distance, and only to work on construction at such times as the men could not be used on maintenance.

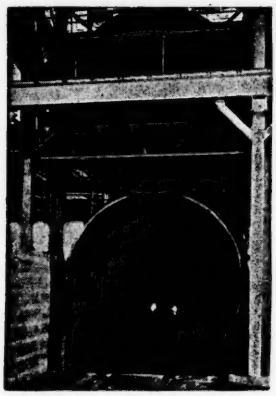
In a large portion of the State, the farmers were seriously handicapped by the labor shortage. In order to help harvest crops that otherwise could not have been saved, a portion of the convict labor was made available to the farmers. This further delayed the maintenance program of preparing the highways for the winter.

Plans have now been completed to shift more camps to critical areas and to locate other camps so as to insure the maximum use of all convicts on maintenance.

In order to further meet the manpower problem and also to assist farmers in drought areas, farmers all over the State were advised by news articles that whenever they or their farm hands, trucks or tractors could be spared from farm work, they should report to the nearest highway field office and they would be given employment.

Virginia does not feel that she has overcome all her problems. Much depends upon the duration of the emergency. She does feel, however, that she is meeting the highway problem as well as possible under the circumstances.

Lancaster TANKS



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THIS
SURFACE-TREATED SHEET STEEL
Gives you
5 Big Advantages

From Armco Research comes another new specially surface-treated sheet metal—ARMCO Cold Rolled PAINTGRIP.

This special grade of steel can eliminate a number of costly operations from your fabricating practices. The reason: It is mill-treated —given an electrolytic "flash" of zinc and then Bonderized. This zinc-phosphate surface is an integral part of the sheet.

Weigh these five important advantages:

1. *Easy to Fabricate.* ARMCO Cold Rolled PAINTGRIP will draw, form, weld and solder readily.

2. *No "After-Treatments."* The special surface treatment remains intact during fabricating. Bonderizing after fabrication is eliminated. The sheet can be painted immediately.

3. *Smooth Finish.* ARMCO Cold Rolled PAINTGRIP is ideal where a uniformly smooth surface is essential.

4. *No Rusting in Storage.* Under normal conditions sheets or coils will not rust during shipment or while in storage, either as sheets or in semi-finished parts.

5. *Choice of Base Metals.* Although cold rolled steel is standard for this grade, other base metals can be obtained on large orders.

This specially surface-treated steel is well suited to such uses as kitchen cabinets, bathroom cabinets, refrigerator wrappers, furnace casings, metal furniture, filing cabinets, auto body parts, vending machines, and painted hospital equipment.

Write for more information about ARMCO Cold Rolled PAINTGRIP. You'll appreciate its cost-saving, product-improving possibilities. The American Rolling Mill Company, 2591 Curtis Street, Middletown, Ohio.

EXPORT: THE ARMCO INTERNATIONAL CORPORATION

PAINTGRIP ★ ARMCO ★ COLD ROLLED STEEL

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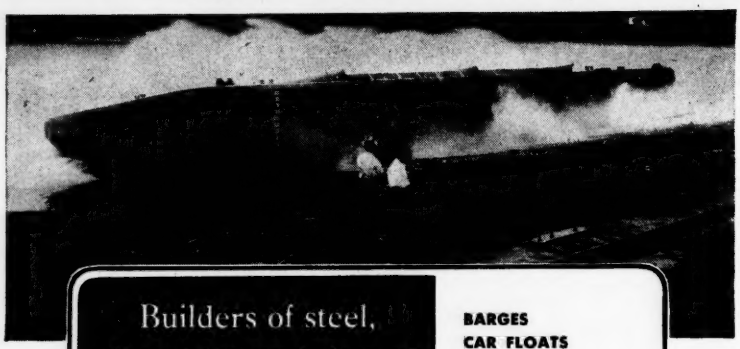
All-welded sand barge of two sand compartments



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JOHNSON STEEL & WIRE CO., INC.
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Texas Gulf Sulphur Wins Fourth Production Award

The Texas Gulf Sulphur Company, with mines at New Gulf and Long Point, Texas, has won for the fourth time the Army-Navy Production Award for outstanding achievement in producing materials essential to the war effort. A third White Star has been added to the Army-Navy Production Award flag which was given to the Company on November 2nd, 1942. The announcement of the award was made by Robert P. Patterson, Under Secretary of War, during the last week in July.

Gifford Urges "Win the War"

"Post war plans begin with doing everything we can to help win the war as quickly as possible," said Walter S. Gifford, president of the American Telephone and Telegraph Co., in an address at the annual meeting of stockholders held recently in New York.

Mr. Gifford did not decry thinking about post war problems now, and planning to meet them, but he pointed out that our most important contribution to post war is to hasten the day of victory.

"Nothing," he said, "can contribute more to the country's prosperity and well-being than the earliest possible victorious ending of the war—both in Europe and the Pacific. The longer the war lasts, the greater the loss of life; the greater the number of wounded who will be permanently disabled; the greater the national debt; the greater the risk of dangerous inflation and the greater the danger of peacetime continuation of wartime governmental controls, for the longer these have to be in effect because of the war, the more they tend to become permanent."

Bell System contributions to the war effort, according to Mr. Gifford, included payment of direct Federal taxes of more than $648,000,000; collection of more than $300,000,000 in excise taxes and the investment of practically all of its cash assets in government securities. Employees have bought over $200,000,000 of war bonds through the pay roll deduction plan and have participated in various civilian defense, U. S. O. and Red Cross activities.

Mr. Gifford gave thanks to the general public for its cooperation and understanding in keeping the use of long distance telephone lines to a minimum that war might have the wires.

Fluorspar Industry Sets New Record

Despite many difficulties of operation in 1943 the fluorspar industry established an impressive record in supplying the unprecedented demand for this mineral, according to the U. S. Bureau of Mines. Fluorspar is essential in the manufacture of steel, aluminum, high-octane gasoline, refrigerants, insecticides, and other products necessary in the prosecution of the war. Production of finished fluorspar was 405,600 short tons in 1943. In addition, 65,000 tons of crude ore, equivalent to 27,400 tons of finished fluorspar, were mined but not milled in 1943. Thus, total production (expressed in terms of finished fluorspar) was 433,000 tons in 1943 compared with 337,000 tons in 1942. The Illinois-Kentucky district accounted for 75 per cent of the total in 1943 as compared with 79 per cent in 1942.

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BALTIMORE, MD.
Dredging—Construction—Engineering
Distributors of Sand-Gravel-Stone and Commercial Slag

A COMPLETE ORGANIZATION

Our complete organization with years of experience in successfully executing large construction contracts of various kinds is prepared to undertake the construction of earth, masonry and concrete dams, dry-docks, dredging of all kinds, river and harbor improvements, deepening channels, hydraulic filling and rock work, tunnels, railroad construction, sewers and waterways.

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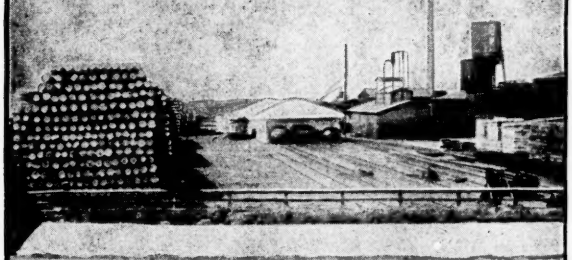
Docks for Ocean Vessels



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Plants at: New Orleans; Winnfield, La.; Louisville, Miss.; Savannah, Ga.; Jackson, Tenn., and Norfolk, Va.

"THE OPPOSITION VIEWS THE OPPOSITION"

Crawford in The Newark Evening News

Ship Orders to Southern Yards

Maritime Commission's recent announcement that 262 additional ships are to be built stated contracts for 102 of the vessels have been awarded to shipyards in the South.

Bethlehem-Fairfield Shipyard, Inc., Baltimore, received the largest order, 44 ships of the Victory type. Fifteen of the 9,700 ton C2-S-AJI type are to be built by North Carolina Shipbuilding Corp., Wilmington, N. C. Alabama Dry Dock and Shipbuilding Co., Mobile, Ala., will construct 7 tankers of the T-2 type. Pennsylvania Shipyards, Inc., Beaumont, Texas, are to build four of the 5,000 ton cargo vessels, type C1-M-AV-1.

Awards for 32 coastal cargo vessels were as follows: McCloskey & Co., Tampa, Fla., 15; Pendleton Shipyard Co., New Orleans, La., 6; Avondale Marine Ways, Inc., Westwego, La., 8 and Ingalls Shipbuilding Corp., Decatur, Ala., 3.

Sulfur Shipments High

Movement of native sulfur was maintained at a high level during the first quarter of 1944, according to figures released by the Bureau of Mines, United States Department of the Interior. Shipments from the mines were 38 per cent and apparent sales 21 per cent greater than in the same period of 1943, whereas production was 10 per cent lower. The rate of sales was apparently nearly the same as the average for the full year of 1943. The exceptionally large shipments from the mines were partly due to rebuilding of stocks held at other locations. Louisiana and Texas produce all of the sulfur mined in the United States.

Georgian to OPA Committee

Fred Lester, general manager of the Chemical Products Co., Cartersville, Ga., has been elected Chairman of the newly appointed industry advisory committee representing producers and dealers in barium chemicals, the Office of Price Administration announced recently.

HOW AMERICAN ENTERPRISE PRODUCES MORE, FASTER, BETTER— WITH BOWSER EXACT LIQUID CONTROL

Up where sawmills have to be flown in...

Bowser Engineered Fueling Systems

Installing airports and fueling systems on the route to Alaska operated by Northwest Airlines for the Army Air Forces, was a mighty tough job. The route was largely through primitive country, some of it so isolated that ground transportation methods were useless. For instance, a 24-bed hospital was flown in. So was a sawmill. That gives you an idea of the problems.

Bowser Fueling Systems were chosen for three major reasons:

1. In airport operations in many countries, under all extremes of conditions, Bowser Systems have proved superior in the delivery of clean, dry, safe fuel.

2. Bowser designs and builds systems to meet virtually every kind of special requirement, however unusual.

3. Bowser-built equipment has established records for dependability and efficiency in hundreds of industries over scores of years.

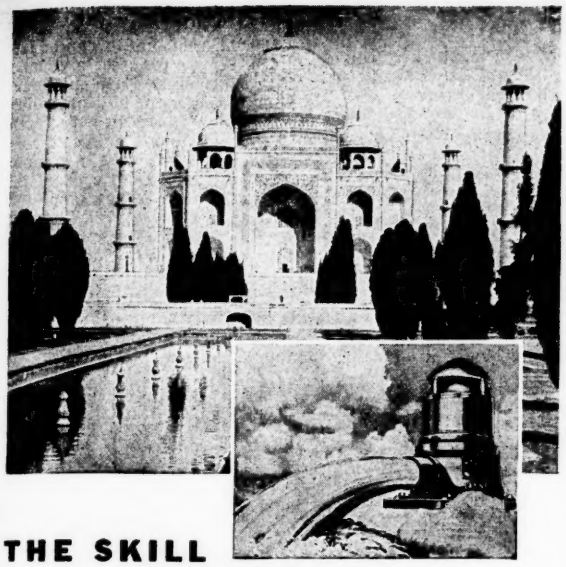
Airport fueling systems are a specialized field, of course. But Bowser specializes in every phase of exact liquid control. Bowser Meters, Proportioners, Filters, Lubrication Systems, Pumps, Stills, etc., have indispensable applications in almost every factory.

Here's a typical example: A plant in upper New York State installed a Bowser Pressure Filter for cutting oil. First job was reclaiming oil that had been in use five years and was terribly dirty. Two processings restored it to original color. Cutter life between grinds was increased approximately 100%. Note this, too—Dermatitis cases (skin infection, due to contact with oil) dropped appreciably immediately after the filter went to work. Those points add up to a major economy. BOWSER, INC., Fort Wayne 5, Indiana.

Not only has Bowser's war production earned the Army-Navy E... Bowser equipment has helped earn it for scores of other companies.

BOWSER ESTABLISHED 1885

The Name That Means EXACT CONTROL of Liquids



THE SKILL

OF THE BUILDER

Needs No Praise

No one had to proclaim the merits of the man who built the incredibly beautiful Taj Mahal of India. The building itself is a monument to his incomparable skill.

Nor need any one in the Layne Organization preach the superior merits of Layne Water Systems or of Layne High Efficiency Pumps. They need only to point to any of many thousands now in operation and say—"Go and see for yourself." This long used policy places all responsibility directly upon the product itself.

Each Layne Water System is a "tailored to fit" job. The size of motor, casing, shafting, bearings, pump bowls and screen mesh are determined by the actual physical and operating conditions of each installation.

The finished product is delivered — "in operation" — producing the stipulated quantity of water. Layne Companies are located throughout the territory served. This insures prompt and efficient attention when adjustments, servicing or repairs are required.

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LAYNE

WELL WATER SYSTEMS

DEEP WELL PUMPS

BUILDERS OF WELL WATER SYSTEMS FOR EVERY INDUSTRIAL AND MUNICIPAL NEED

The fact that the production of war materials has reached its peak provides no basis for the assumption that manpower problems soon will cease to exist. The demand by the Armed Forces for men and women continues to be great. In industry, the tendency must be toward an increased number of women workers and older men. In this period, more than ever before, it becomes necessary to mechanize the handling of materials through processing, storage, shipping, and, in fact, wherever possible — to minimize lifting, pushing, and excessively fatiguing effort. Here, Mathews Engineering can help as it has done in thousands of great American and Canadian war plants during this emergency. Your Mathews Engineer can show you how modern Mathews methods can conserve manpower and promote economy in the materials-handling phase of your manufacturing.

Mathews Conveyer Company

ELLWOOD CITY, PENNSYLVANIA

Magnesium Production Cut

War Production Board announced recently that the monthly production schedules of four magnesium plants have been reduced and that of a fifth plant terminated in order to bring surplus supplies of magnesium more in line with the nation's stock pile objectives. The curtailment at these plants, all of them Government-owned, will result in a reduction of 7,517,000 pounds per month in magnesium production. Manpower considerations were the principal criterion in the selection of the plants to be curtailed. WPB said it had been informed by the War Manpower Commission that all plants affected are in or immediately adjacent to tight labor areas and that jobs are available in war plants and strategic metal mines and mills for all workers who are released as a result of the cutbacks.

Surplus Government Property

Jesse H. Jones, Secretary of Commerce, recently announced that up to July 15, 1944, property costing $72,337,730 had been declared surplus to RFC by other owning Federal Agencies Of this amount, $66,007,247 represents airplanes and aircraft equipment. RFC-owned surplus property amounted to $109,104,937 which, with the property from other owning Federal Agencies, makes a grand total of $181,442,667. Of this amount, surplus property costing $59,004,006 had been disposed of for $52,562,554.

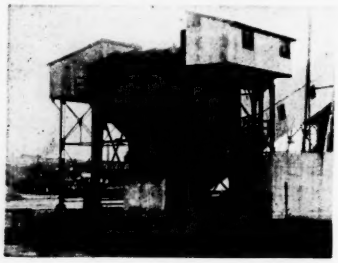
Fuel Supplies to Be Tight

Fuel supplies of coal, oil and wood will remain tight through 1944 and into 1945, the Office of War Information said recently in a report on the fuel situation based on data supplied by Solid Fuels Administration for War, Petroleum Administration for War, OPA, ODT, WPB, the Forest Service and the Bureau of Labor Statistics. Manpower shortages and problems of transportation are chief factors responsible for the condition which will exist and no improvement is foreseen at this time. Domestic consumers of coal will receive about 90 per cent of annual requirements, while domestic fuel oil users in 33 states may expect about the same quantities received during the past season. Rationing of solid fuels is not contemplated at this time, said the report.

Fertilizer Sales Up

Fertilizer sales for the fiscal year ending June 30 indicated consumption increased approximately 13 per cent. All states reporting, Arkansas excepted, showed heavier consumption, Florida led with 165,000 tons.

"PENNSYLVANIA"
BRADFORD BREAKERS



A combined Crusher, Sizer and Cleaner for R. O. M. and smaller feeds. Forty sizes and types—principally for Coals for Power Stations and Mines. Reclaims good Coal from the harder picking table refuse.

Crushing done by "gravity impact." Tramp iron has no terrors for this breaker.

Capacities 25 to 1500 T.P.H.

If interested, write for bulletins.

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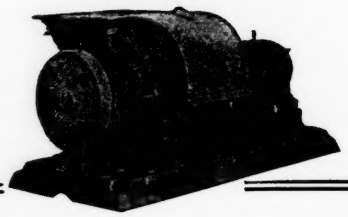

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You can be sure of continuous production with low maintenance cost, high output and low power consumption with AMERICAN.

Write for catalog or special data.

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"A Fitting Grating For Every Purpose"

Press-Locked

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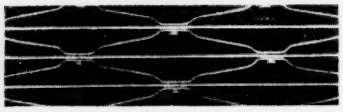

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- Jak-Tung platforms to store and carry loads
- One Jak-Tung serves many platforms.
- Jak-Tung is simple, safe and easy to raise and lower
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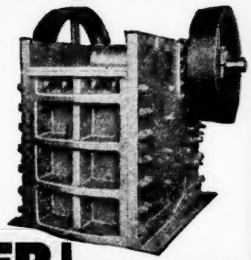

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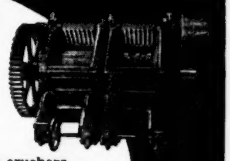

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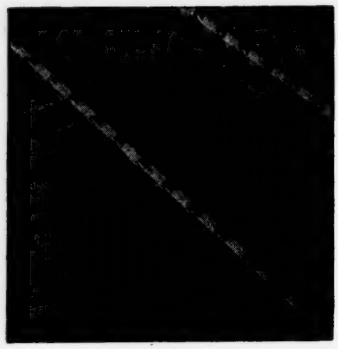
Wade Directs Hampton Port

The Virginia State Port Authority has announced the appointment of Herbert C. Wade as Director of the Port of Hampton Roads. W. H. Maher, acting director since March 1942, returns to his former position of special representative. Mrs. Emma G. Saunders continues as secretary.

Giffels, Vallet Open Branch

Giffels and Vallet, Inc., one of America's largest engineering and architectural firms, with home offices in Detroit, have opened a branch in Atlanta, Georgia. The new office, under the management of William A. Jaeger, is in the Mortgage Guarantee building. Approximately 30 persons constitute the initial staff.



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Ben Alexander, Lumber Authority, Passes

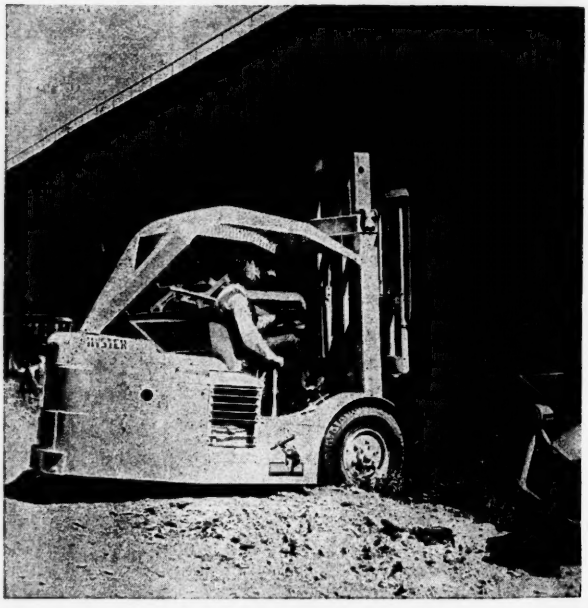
Ben Alexander, 49, president of Masonite Corporation with factories at Laurel, Miss., died July 6 in Rochester, Minn., following an illness of only two weeks. His residence was in Chicago. Mr. Alexander was a leading authority on timber in the United States and spent almost his whole life in the lumber, timber, paper and associated industries. He was a director of a number of corporations, among them the Gulf, Mobile and Ohio Railroad.

Kentucky Fluorspar Mapped

Preliminary maps and sections showing the areal geology and mine workings on the Mineral Ridge fluorspar property in Livingston County, Ky., are now available for public inspection in open files of the Geological Survey in Washington, D. C., and Rolla, Mo., as well as in the post office at Marion, Ky. Fluorspar, which occurs in lenticular masses in the limestone and sandstone, has been mined from this area intermittently since the first World War. The property has also yielded a small tonnage of lead ore.

Minerals of Virginia

Virginia Minerals in War, an article by Arthur Bevan, State Geologist of the Virginia Conservation Commission, dealing primarily with the war uses of Virginia minerals, also lists many normal uses and suggests some post-war possibilities for their further commercial development. Published in pamphlet form, the article is available from the Division of Publicity and Advertising, Virginia Conservation Commission, Richmond 19, Va.



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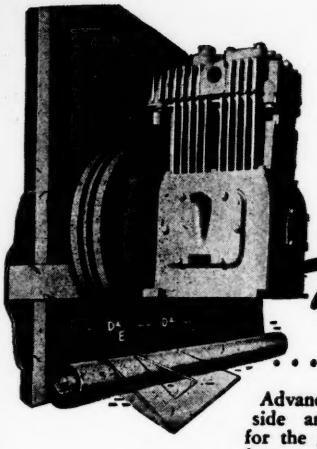

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The output of our plants will continue to be devoted to these essential requirements until Victory itself is "in the bag."

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Also sole manufacturers of Alligator Steel Belt Lacing for flat transmission belts and Flexco HD Belt Fasteners and Rip Plates for fastening and repairing conveyor belts.

Facts of Government Finance

Facts and Figures on Government Finance, published by The Tax Foundation, 30 Rockefeller Plaza, New York 20, N. Y., a comprehensive collection of data on the subjects of taxation and public debt—federal, state and municipal—will prove a valuable addition to the library of any business man giving serious thought to the ever-present problems of the public financial structure. Prepared without political bias, the 144-page booklet is factually and objectively written, while a series of statistical charts and drawings graphically make its entire contents readily understandable without the necessity of a profound knowledge of economics and finance. Those genuinely interested may have a copy, without charge, by addressing the publishers direct.

Edmund H. Lunken Passes

Edmund H. Lunken, Chairman of the Board of The Lunkenheimer Company, Cincinnati, Ohio, valve manufacturers, died Wednesday, July 19, at his summer home in Michigan. Mr. Lunken, who was 83 years old, had been active and in good health until recently.

The son of Frederick Lunkenheimer, founder of The Lunkenheimer Company, he was born in Cincinnati and educated in the Cincinnati schools. At the age of 16 he entered his father's business, which had been established in 1862. Upon the death of his father in 1889, he assumed leadership of the company and remained its senior officer until his death.

Post War Plans of Fort Smith

A post war planning survey of Fort Smith, Ark., and the surrounding rural area, has been sponsored and prepared by the Fort Smith Chamber of Commerce, Bureau of Research of the University of Arkansas, the Arkansas Economic Council, Arkansas State Planning Board, U. S. Department of Agriculture and the Federal Reserve Bank of St. Louis. The survey will be of value to industrialists, investors and others sincerely interested in expansion into Arkansas. Address the Fort Smith Chamber of Commerce for copy.

N. C. Pottery Survey

"Economic Opportunities for Producing Semi-Porcelain Dinnerware in North Carolina," a special bulletin prepared by the Division of Commerce and Industry, North Carolina Department of Conservation and Development, Raleigh, will be of value to those industrialists and investors who are seeking post-war opportunities in southern ceramic manufacturing fields.

Prepared under the direction of Philip Schwartz, industrial analyst, the bulletin is a factual analysis that has omitted no basic details necessary to form an opinion of the possibilities and probable returns from an investment in the manufacture and marketing of dinnerware in North Carolina and other markets.

Raw materials, fuel, power, taxes, labor and transportation of finished products are some of the variable costs that receive careful treatment, while immediate and potential marketing areas are thoroughly analyzed.

The bulletin and more detailed, specific information may be obtained by writing direct to the Department at Raleigh, N. C.

Delta's Traffic Zooms

Delta Air Lines' half-yearly report for 1944 shows soaring increases in every aspect of traffic as compared with the similar period of 1943: 54 per cent increase in pounds of mail carried; 57 per cent increase in pounds of express carried. Passenger traffic was up 34 per cent over the first half of 1943, and revenue passenger miles advanced from 18,593,810 to 27,076,486, an increase of 45 per cent. Delta carried 69,303 persons across the South during the first half of 1944, as contrasted with a total of 51,703 for the same period last year.

Missouri Barite Price Advanced

The maximum price for barite produced in Missouri has been set at $8.50 per short ton (for crude ore containing approximately 94 per cent barium sulphate) by the Office of Price Administration to assure its continued production. Former maximum prices generally ranged from $7 to $7.25 per short ton. The new ceiling became effective July 31.

National Banks of the South

The 1491 National Banks of the sixteen southern states closed the year 1943 with deposits of $12,862,562,000 and assets of $12,109,272,000, according to a report by the Comptroller of the Currency.

3000 Rooms in the South

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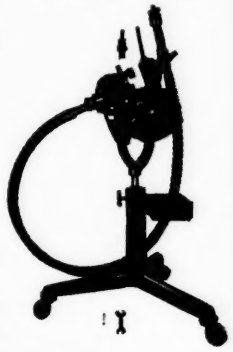

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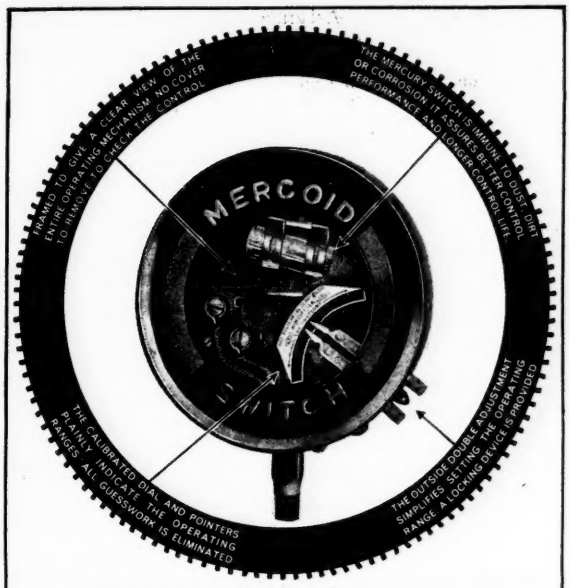
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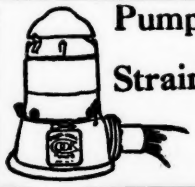

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Rack Rakes

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NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY

NEWPORT NEWS, VIRGINIA

Yellow Cypress Advisory Committee Formed

Formation of a Yellow Cypress Industry Advisory Committee, composed of seven representatives of lumber mills located in Louisiana, Alabama, Mississippi and Tennessee, has been announced by the Office of Price Administration. The committee will consult and advise with OPA on pricing problems arising under Maximum Price Regulation No. 513 — Yellow Cypress Lumber.

Members of the committee are: George Stapleton, King-Edwards-Fuller Co., St. Francisville, La.; Allen LeCour, Denkmann Lumber Co., Canton, Miss.; Milton Craft, Chapman and Dewey Lumber Co., Memphis, Tenn.; M. A. Kurz, Frost Lumber Industries, Shreveport, La.; L. I. Shirtzer, J. W. Wells Lumber Co., Montgomery, Ala.; Armour C. Bowen, James E. Stark Co., Memphis, Tenn.; and W. M. Hallett, Hallett Manufacturing Co., Mobile, Ala.

National Power Show

The 16th National Exposition of Power and Mechanical Engineering will be held in Madison Square Garden, New York, November 27th to December 2, next. This year's event will be keyed to the effective solution of continuing war production problems, particularly those caused by sudden shifts in military needs, demanded by the ever changing scenes in Europe and the Pacific area. It will also provide informational sources for the advancement of post-war planning.

Gurley Becomes President of Santa Fe System

Fred G. Gurley, executive vice president of the Santa Fe System Lines for the past five years, was elected President and Chairman of the executive committee, effective August 1, according to announcement by the System's News Bureau. Mr. Gurley succeeds Edward J. Engel, who retires after 45 years' continuous service with the company. Mr. Engel will continue as a member of the executive committee and board.

Expanded Minerals Program Slated for Southeast

North Carolina State College at Raleigh will become headquarters for an expanded minerals program embracing the Southeast, under plans worked out by officials of the Department of Conservation and Development, the U. S. Bureau of Mines, and college officials. Existing laboratory and machine shop facilities will be expanded, exploration of mineral deposits widened, and additional metallurgical instruction will be inaugurated. The Bureau of Mines will maintain a staff of engineers and research workers at the college. Dr. A. L. Fox, metallurgist now with the bureau's Salt Lake City Utah laboratories, will head the new unit here. The laboratory will be a part of a federal program designed to locate and utilize the nation's strategic minerals for which Congress has authorized expenditure of $3,000,000.

Bell Atlanta Representative for Sherwin-Williams

Sherwin-Williams Co., paint manufacturers of Cleveland Ohio, have announced the appointment of W. B. Bell as manager of its southeastern sales district with headquarters in Atlanta, Ga. Mr. Bell has held various sales-executive positions with the company since 1922.

Bascle New Orleans Manager for Mack-International

Mack-International Motor Truck Corporation has appointed J. A. Bascle district manager of their New Orleans branch. Mr. Bascle previously was a marine engine salesman for Mack.

Ships of Newport News

The inspiring record of the Newport News Shipbuilding and Dry Dock Company, Newport News, Virginia, is set forth in a booklet, "The Shipyard in Peace and War," recently prepared by the Company's Joint Employee-Management War Production Drive Committee. Tracing the company's history from Hull No. 1, built in 1891, to the present day, the booklet is a story of sound management and employee enthusiasm that has contributed much to the Naval and Maritime supremacy of the United States. It is a chronicle that can well serve as a beacon to American shipbuilders of Atlantic, Pacific and Gulf coasts.

If We Lose Our Soil
We Lose All . . .

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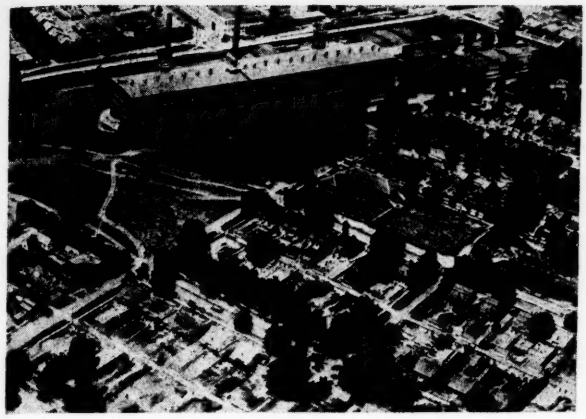

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Hosiery mill, fertilizer plant, oil mill, furniture factory, lumber mills, packing plants and food manufacturing.

Excellent wholesale houses.

HUB OF ALABAMA'S WIREGRASS SECTION—

The fine soil of Houston County, mostly high and well drained, is among the most productive in the whole state. There are few crops that the county cannot grow, and its cotton production is the greatest in South Alabama. In recent years peanuts have pushed cotton as the major crop.

* * *

Napier Field and Camp Rucker, two of a vast chain of U. S. Army training centers, are near Dothan and their personnel makes the City of Dothan their living, shopping and recreation center.

Alabama's youngest county, but according to Roger Babson, second in the United States in opportunity.

CITY OF DOTHAN, ALABAMA

RAWLINS McKINNEY, *President*
COMMISSIONER OF FINANCE AND PUBLIC AFFAIRS

M. A. MILLER, *Com. of Streets and Pub. Util.*
C. L. COLE, *Com. of Safety & Public Health*

Post-War House Building Put at 300,000 Yearly

A NATIONAL survey of expert real estate opinion indicates that the huge estimates of housing to be built in the postwar period may be largely wishful thinking, according to the National Association of Real Estate Boards.

The Association, in its forty-second semi-annual survey of the real estate market, asked local real estate boards to make a close check of the number of houses likely to be built in their communities after the war. Replies from 376 cities in all parts of the country indicated that the number which actually may be built will average around 300,000 annually for the first 10 postwar years.

This is in sharp contrast to other current estimates of potential house construction being circulated. Most of these estimates average more than 1,000,000 units a year. Careful checking on their own communities by local real estate boards, the Association reported, disclosed that these estimates probably are running three times too high.

Representing a check on almost half of the urban population of the country, the realty figures place the number of houses which actually may be built at one for every 227 families. They show the number of units expected to be built annually as averaging 4.4 units per 1,000 of urban population. Applied to the nation, the figures would indicate a yearly postwar building total of approximately 303,000 dwelling units for the urban areas.

The real estate board estimates for new postwar housing likely to be constructed do not equal the present shortage of dwelling space. The survey indicated that the present shortage of dwellings is running at the rate of eight single family houses per 1,000 of population and three apartment units per 1,000, a total shortage of 11 units per 1,000 of population. In spite of this shortage, the most severe on record, the boards do not anticipate that enough new houses will be built completely to take up the theoretical need.

Commenting on the results of the survey, Herbert U. Nelson, Executive Vice President of the Association, said:

"Careful checking by local real estate boards indicates that the talk about a huge home-building boom after the war may be an illusion. So far, most estimates have been in box-car figures—upwards of 1,000,000 units. Our study casts doubt on such optimistic forecasts.

"It is apparent that if the nation is depending largely upon home building as a means of substantial economic recovery after the war, it is due for disappointment. It seems clear that home-building will have to be coupled with other construction, if we are to count on recovery through construction programs. This means that we should go beyond merely building housing and redevelop our cities on a broad scale.

"Only through a real urban redevelopment and rebuilding program embracing all types of building can we hope to stimulate real recovery. The plain truth is that we cannot count on home building alone to produce what many expect."

The real estate board estimates would mean a home building retreat to about the 1939 level of production. It is only about one third of the figure of a million units a year which in recent months has become very generally accepted as our *potential* postwar demand. At $5,000 per unit the 303,000 units per year would mean something over $1½ billion yearly volume of new postwar urban residential construction.

Experienced real estate observers who made the estimates for their own communities hedged them about with "if." The accuracy of the estimate depends of course on whether wartime immigrants stay or go back home to the degree at present expected and upon whether the observers have made a shrewd guess as to the community's postwar employment level. They state, it depends on promised postwar disposition of temporary war housing. Possibility that materials may remain scarce put another "if" in the estimates. So does the unknown cost level of materials and labor.

Systematic rebuilding of the decayed near-in portions of our cities, and their transformation into clean, pleasant, well planned modern neighborhoods is now under very active discussion as a great field of useful employment in the post-

FABRICATED STEEL

Complete Steel Warehouse

BUILDINGS
TANKS - TOWERS
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SHIP ASSEMBLIES
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Complete Engineering Service

Quality and Accuracy of Fabrication Assured

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MOBILE STEEL CO. INC.

MOBILE, ALABAMA

war period, and as our best means of improving the nation's housing. Asked to make an estimate of the size of blighted areas now ripe for private redevelopment if the public machinery can be devised to set it in motion, 48 percent of the cities reporting in the Association's survey state that they have areas now ripe for large-scale rebuilding. Of war industry areas 54 percent say they have blighted sections ripe for rebuilding.

The average amount reported is 2.17 acres per thousand of population.

Although the Association's survey indicated a smaller number of houses may be built than generally expected, the real estate board reports nevertheless listed homes as the "most-needed" type of structures. Nearly three-fourths of the reporting cities listed home building as first need, while one-fourth listed repairs and reconditioning of houses in the No. 1 spot.

Cities have already begun community action of various kinds to prepare for a new period of building. Rezoning and replanning are commonly recognized needs. Reexamination of the city plan is needed in 52 per cent of the reporting cities, they say, and in 31 percent of these cities such a restudy is under way. Restudy of its zoning regulations is felt to be needed by 60 percent of the reporting cities and 27 percent of them have already begun the work.

Modernization of the building code is a prerequisite to new building, say 52 percent of the cities, and 19 percent of these cities have begun on that job. The plumbing code gets special mention.

Reexamination of building restrictions should be made now, say 47 percent of the cities, and already 17 percent are attacking this job. Further changes may be needed later to make way for new materials and new designing.

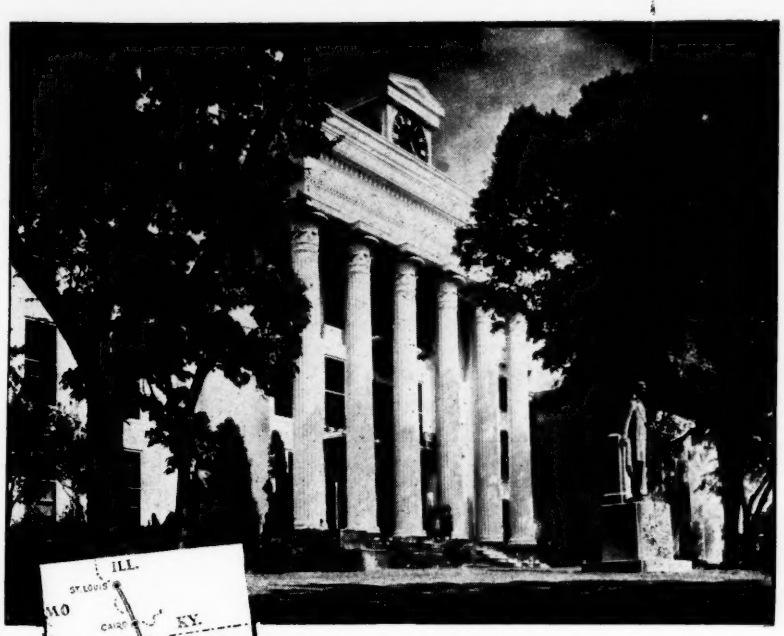
War housing has in many cities temporarily saturated the market for "minimum" houses, and the strongest postwar demand there will be for a "medium" house, a type somewhat above the wartime ceiling. Nevertheless, the broad need will continue to be the low-cost house.

Of the reporting cities 31 percent say the postwar house they most want is in the $4,500—$6,000 class. However, almost as many, 30 percent, feel their postwar need will still be the $3,000—$4,500 house, and 25 percent say it will be an under $3,000 house.

In contrast, 13 percent of the cities look forward to postwar building predominantly in the over—$8,000 bracket.

T. C. I. Workers Get Awards

Thirteen veteran employes of the Tennessee Coal, Iron and Railroad Company, Birmingham, have won service awards for more than 35 years continuous service with the U. S. Steel southern subsidiary, according to company spokesmen. Because medals are unobtainable due to the need for such materials in the war, certificates have been awarded instead of the usual medal. Service certificates given the long-time employes will be redeemed for the U. S. Steel medal as soon as they are again available.



Alabama State Capitol, Montgomery

Come to Dinner . . . . .

Stay a Lifetime in Alabama

The latch-string is always on the outside in GM&O-Land. So, if you are looking for a new place to call home, drop in on us any night for dinner . . . and stay a lifetime.

A native of 96 years, GM&O knows the physical advantages of Alabama; is acquainted with its many outstanding business and civic leaders and can save you time and effort in your industrial planning.

GM&O and Alabama join in extending you an invitation to come to dinner . . . and stay a lifetime.

YOU WILL FIND AMONG OTHER THINGS IN ALABAMA

Temperate climate and good living conditions. Adequate transportation facilities. Intelligent native labor, both skilled and unskilled. Natural resources — forest products, iron, coal, coke, limestone and many non-metallic minerals.

A large supply of industrial materials such as iron, steel, aluminum and lumber. Abundant fuel, power and water. Cooperative state, county and municipal governments.

INDUSTRIAL DEPARTMENT
Mobile, Alabama

GULF, MOBILE & OHIO RAILROAD

The Rebel Route

Motor Travel Costs Seen Lower After War

AN adequate postwar highway program will bring cash benefits in excess of the cost, according to a bulletin issued by Charles M. Upham, engineer-director of the American Road Builders' Association. "While the average motorist may not think his car driving costs amount to a great deal, the total spent in operating all cars, buses and trucks, and maintaining and constructing roads runs into billions annually," Mr. Upham said. "Prior to the war the aggregate costs were closely estimated at 17½ billion dollars a year. Of that vast sum, a relatively small portion was spent for road and street construction and maintenance, less than 2½ billions. That means, for every seven dollars spent by the average road-user, only one dollar went into road upkeep and construction and six dollars went into direct car costs.

"The only way to reduce the cost of driving motor vehicles is by providing roads and streets which will bring more miles of travel per gallon of gasoline, less brake and tire wear, fewer broken springs, longer vehicle life and fewer accidents. Tests made in Iowa entailing 260,000 miles of operation showed that gasoline costs on gravel roads were 10 per cent higher than on high-type pavement; that the cost of lubricating oil was 40 per cent higher; that car repairing costs were three times higher.

"No tests have been made on the high costs of driving over deteriorated, overage pavements but obviously they exact huge tolls. Roads and streets are a casualty of the war. Even before the war, road and street construction lagged behind actual needs. During the war, new construction has practically stopped and manpower, equipment and material shortages have also caused a neglect of maintenance.

"To make up for lost time and to meet even the minimum needs, we are going to have to greatly step up highway construction. Plans being made by industry and business for future well-being will have one certain result—an immediate and continued increase in highway traffic. Unless a bold attack is made on inadequate roads and streets, plans for converting to peacetime business activity will be seriously hampered if not defeated.

"Consequently, the Federal government, the states, the cities and counties must make definite highway programming and financing plans now. Aside from the direct benefits produced by highway construction, an adequate program will practically eliminate the need for relief work, which in the end would prove more costly than the planned construction."

ONE OF THE MANY GOOD BANKS SERVING A NEW EMPIRE—

NORTH ALABAMA

The best of agricultural territories in the state, and a fast developing industrial empire. The Great Lakes of the South denote abundant cheap power.

Progressive industries desiring post-war development are invited to consult this bank.

Resources $25,000,000.00

STATE NATIONAL BANK

Head office

DECATUR

Member Federal Deposit Insurance Corporation

Record Post War Appliance Demand Predicted

A 40 per cent increase in sales of radios, refrigerators, air conditioners, automobiles and all other consumers' durable goods over the best pre-war year can be expected in the first twelve months of full production after victory, predicted James H. Carmine, vice-president in charge of merchandising for Philco Corporation, in a recent address before an appliance industry organization.

"Once the war emergency is over, the fact that there has been no new production of appliances for a long time, is a sure guarantee of a period of extraordinarily good business for everyone connected with consumers' durable goods, including dealers, distributors and manufacturers," Mr. Carmine said. "A virtual vacuum of all kinds of electrical appliances has developed, and it will take months to stock distributors and dealers, once production has been resumed, to say nothing of meeting the urgent demands of the public.

"People are not only going to want and need every kind of appliance, but will be able to buy them. It is estimated that by the end of 1944 the accumulated savings in the hands of the public in the form of cash, bank deposits and war bonds, will approximate $100 billion. In addition, instalment credit outstanding has been drastically reduced, so that the credit standing of the American people is higher and their borrowing power is far greater than ever before."

In 1941, the last pre-war year, approximately $10,300,000,000 was spent by the American people on consumers durable goods. "In the first year of full production after victory is won, there is every reason," said Mr. Carmine, "to believe that we can look forward to a total national business in these lines of about $14,500,000,000 — an increase of 40 per cent."

18 Years

of Successful Building Experience . .

FOUNDED IN 1926

Organized and incorporated January 1st, 1926, the Henderson, Black & Greene Mill Company now has seventeen years of successful building experience behind it.

A MOST MODERN MILL WORKING PLANT

For several years after its founding, our company confined its activities to the manufacture and retail sales of lumber as well as other building materials. Later we extended our business interests to the manufacture of Sash, Doors and Millwork. Today our plant, devoted to this phase of our operation is one of the best and most modern in the whole state.

GENERAL CONTRACTORS

With the knowledge and experience in construction that naturally came to us in the years of our operations, we decided ten years ago to enter the general contracting business. Today our general contract organization is a large one, and its completed projects are innumerable.

ENGAGED IN WAR CONSTRUCTION

During 1942 we completed more than several million dollars worth of war construction and are engaged in further activities along this line at the present time.

COMPLETE ORGANIZATION

Ours is a complete, thorough organization, ready for assignment that calls for one stick of lumber to construction projects of great magnitude.

HENDERSON, BLACK & GREENE MILL CO.

E. L. BOATNER, President **P. C. BLACK, Vice-President** **G. G. GREENE, Secy-Treas.**

BUILDERS SUPPLIES CONTRACTORS and BUILDERS

TROY, ALABAMA

1883 **1944**

USE

STANDARD FERTILIZER

Made By

STANDARD CHEMICAL CO., Inc.

TROY, ALABAMA

Southern Industrial Expansion

(*Continued from page* 122)

tural engineering department of V. P. I., interested in establishment of freezer locker plant; Roy J. Hurt, chairman of committee.

BENTONVILLE—Plant — Brown & Matthews, Inc., New York City, have contract for $500,000 plant for manufacture of carbon bisulphide for Stauffer Chemical Co., New York.

DANVILLE—Locker Plant — City Council, Public Works Committee, recommended that $15,000 be spent in building frozen locker plant for Danville.

HOPEWELL—Expansion — Hercules Powder Co., New York, plans approximately 60 per cent expansion capacity at ethyl cellulose plant.

HOPEWELL—Plant — United States Foil, an affiliate of Reynolds Metals Co., Richmond, has been awarded contract with the supply department of the Navy to operate plant processing and repacking military equipment and material for overseas shipment; buildings leased.

WEST VIRGINIA

LOGAN—Timber—W. M. Ritter Lumber Co. Columbus, Ohio, purchased 1,392 acres of coal and lumber land on the headwaters of the Big Cub and Elk Creeks in Logan County.

Portland Cement Needs Put at 66,338,000 Barrels

PORTLAND cement requirements for 1944 are estimated at 70,788,000 barrels, of which 66,338,000 barrels will be used for domestic construction, and 4,450,000 barrels will be exported, the War Production Board announces. Exports include shipments to Alaska, Hawaii, Puerto Rico, Canal Zone, and foreign countries and for military construction outside the continental United States. Some of the cement used for construction outside the United States will be procured abroad.

Total estimated 1944 requirements represent a 44.5 per cent decrease from 1943 consumption, with a 45 per cent decrease for domestic use and a 35.1 per cent decrease for export. Consumption in 1943, according to Bureau of Mines monthly shipment data, was highest in the area comprising Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia. In this area, consumption was 22,084,000 barrels, or 17.3 per cent of total consumption. This year, Arizona, California, and Nevada are expected to have the highest combined requirements, with 14,528,000 barrels or 20.5 per cent of total requirements.

"It is unlikely," WPB Building Materials Division officials say, "that actual requirements in 1944 will prove to be materially lower than the estimates. Consumption may run higher, depending on possible increases in the use of cement for maintenance and repair, or in the event that the war situation permits a greater volume of new construction than has been estimated."

Equitable Securities to Offer Business Management Service

A business and management department, said to be the first ever established by an investment banking house, will be inaugurated September 1 by the Equitable Securities Corporation of Nashville, Tenn.

Brownlee O. Currey, president, has announced that George J. Hearn, former vice-president of the American National Bank of Nashville, will be the director of the new department which will give counselor service on all phases of business operations. Mr. Hearn will be assisted by J. C. Schutt, for 26 years his partner in firm management.

Equitable has offices in Atlanta, Birmingham, Chattanooga, Greensboro, Hartford, Knoxville, Memphis, Nashville, New Orleans and New York.

Employers Life Insurance Organized in Alabama

Employers Life Insurance Company, newly-organized with home offices in Birmingham, has begun operations in Alabama and the South, with an authorized capital and surplus of $300,000.

An outgrowth of the Employers Insurance Company of Alabama, the new company has the same officers who started the original company 21 years ago.

The old company wrote only casualty insurance. The Employers Life will write all forms of ordinary, intermediate and industrial life insurance on the whole life, limited pay and endowment plans, as well as group life, group hospitalization and group accident and health insurance.

William H. Hoover is president; F. M. Jackson, chairman of the board; T. C. Huey, executive vice-president; G. G. W. Hoover, vice-president, and L. A. Henry, secretary-treasurer.

• Harnessing the Electric "Horses of Power" of Alabama's natural resources, the development of Electrical Distribution and Transmission Systems has played an important part in her great Industrial Development.

• "SOUTHERN STATES" is proud of her opportunity and share in this development, furnishing . . .

• ELECTRICAL DISTRIBUTION AND TRANSMISSION FUSES, SWITCHES, CONNECTORS, AUTOMATIC SWITCHING EQUIPMENT AND SUBSTATIONS . . . to

- INDUSTRIALS
- MUNICIPALS
- PRIVATE UTILITIES
- TENNESSEE VALLEY AUTHORITY
- RURAL ELECTRIFICATION ADMINISTRATION

• Pioneers in development of Dropout and Repeating Fuses.

• *"A Fuse Link—or a Complete Substation"*

SOUTHERN STATES EQUIPMENT CORP.

28 S. 20th ST. BIRMINGHAM 3, ALA.

Serving Alabama since 1872

SEVEN
LINES of SERVICE

- PHOTOLITHOGRAPHY
- PRINTING & BINDING
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- RUBBER STAMPS & SEALS
- OFFICE FURNITURE
- OFFICE SUPPLIES
- COMMERCIAL ART

With pride Roberts & Son looks upon the achievements of 72 years and into the future with a determination to keep abreast of the times and development of Alabama.

We are proud of the important part we play in meeting the needs of Alabama and Southern business houses, governments and institutions through our Seven Lines of Service.

ROBERTS & SON

520-30 SOUTH NINETEENTH STREET · BIRMINGHAM · 3 · ALABAMA

AVONDALE MILLS

SYLACAUGA, ALABAMA

Oklahoma Conservation Program

(*Continued from page* 114)

tion laterals and canals to serve 430,000 acres.

More than 90 per cent of the State of Oklahoma is now in organized soil conservation districts. These have been set up by the people and are administered by them with the aid of the Federal and State governments. Local participation in the $175,000,000 program, which would extend over a period of 15 years, is placed in the neighborhood of $85,000,000.

A total of 35,000,000 man-days of skilled and unskilled labor and of assistance from experienced technicians would be required to carry out the work. Machinery operations required would include 3,500,000 days by light tractors, 600,000 days by heavy tractors and 23,000,000 days with horse-drawn equipment. Fence work would total 104,000 miles and seedling trees for wind breaks, shelter belts and post plants, 155,000,000.

Translated into units of construction equipment, according to the Oklahoma Planning and Resources Board, the program would require:

Tractors	1,033
Graders (large)	665
Graders (small)	1,000
Fresnos	1,780
Power Shovels Draglines	600
Trucks	1,400
Pick-up Trucks	1,500
Centrifugal Pumps	400
Road Patrol Machines	500
Scarifiers	340
Sheepfoot Rollers	300
Concrete Mixers	500
Brush Mowers	1,134
Grass Seeders	2,000
Bulldozers	835
Carryalls	370
Limespreaders	350
Terracers	114
Land Levelers	50
Fertilizer Attachments	245
Air Compressors, Drills	400

Chairman Don McBride,, of the Oklahoma Planning and Resources Board, estimates that about 5,000 farm ponds and at least 5,000,000 acres will be placed under the soil conservation program this year, despite the scarcity of equipment and manpower.

South's 100-Octane Plants

(*Continued from page* 117)

single section of the plant, which is evident from the photographs. The other processes employed (alkylation and isomerization) are extremely important but the plants required are far less extensive.

Virginia Manganese

Manganese deposits in central Virginia, occurring in a belt that extends from near Warminster, Nelson County, southwestward to the Roanoke River at Altavista, have been studied by the Geological Survey, U. S. Department of the Interior, as part of the emergency war-minerals program. Between 45,000 and 55,000 long tons of washed manganese ore containing 40 to 50 percent of manganese have been produced from the various mines of the district since 1868. Most of the ore was mined prior to 1918, and since then the production has been small. Mining activity in the district has been revived in recent years, owing to the increased demands for manganese for war purposes. An area about 60 miles long and 3 to 6 miles wide has been studied and mapped by geologists of the Survey's staff, and the surface and accessible underground workings of many of the mines have been mapped in detail. A program of drilling, trenching and test-pitting was subsequently carried out at several of the mines by the Bureau of Mines of the Department of the Interior. A copy of the preliminary report on the manganese deposits and geology of the area, along with a geological map of the district, has been placed in open files at the office of the Director, Geological Survey, Washington 25, D. C., where it may be consulted by those interested in the deposits.

Carloadings First Half 1944

Revenue freight carloadings for the first half of 1944 totaled 21,051,927 cars, an increase of 951,459 over the same period in 1943, but 11,474 under the first six months of 1942.

T. R. Miller Mill Co., Inc.

MANUFACTURERS OF

SOUTHERN PINE LUMBER AND TIMBER

CREOSOTED PINE PRODUCTS

and

WIREBOUND SHIPPING CONTAINERS

BREWTON, ALABAMA

Progressive Forestry Management practiced on sustained-yield holdings assures our continuing production of Premium Quality LONGLEAF and SHORTLEAF Yellow Pine for all Domestic and Export markets.

SCOTCH LUMBER CO.
FULTON, ALABAMA

Member: ALABAMA TREE FARMS SYSTEM
SOUTHERN PINE ASSOCIATION

MOBILE RIVER SAW MILL CO., INC.

MOUNT VERNON, ALA.
(Mobile County)

•

BAND-SAWED HARDWOODS
CYPRESS

•

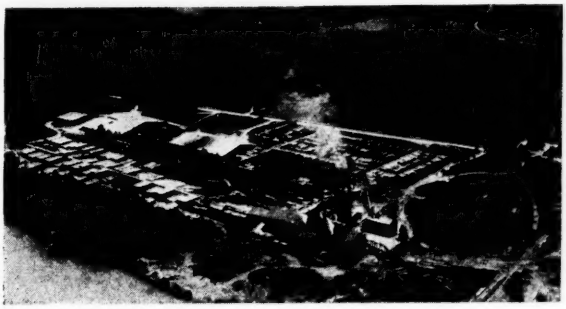
Also "Mount Vernon"
BRAND OAK FLOORING

•

Our New Saw Mill, Oak Flooring Plant and Planing Mill are now in operation.

•

EXPORT, COASTWISE AND PACIFIC COAST SHIPMENTS MOVE VIA MOBILE, ALA.
CABLE ADDRESS: MRSCO



SWIFT-HUNTER LUMBER COMPANY

ATMORE, ALA.

Manufacturers of

LONGLEAF AND SHORTLEAF PINE AND HARDWOODS
SIZED TIMBERS - END MATCHED FLOORING

OFFICERS

G. R. SWIFT, President
W. N. HUNTER, Vice-President
T. S. HUNTER, Treasurer
J. B. SWIFT, Secretary

Helium—"Miracle Gas"

(*Continued from page* 105)

melted, poured, and processed in an atmosphere, or under a cover of helium, the cost of production might be lowered enough to more than offset the price of the helium. Similarly, helium probably could be used to protect some chemical products damaged by air during their manufacture.

As a food preservative, helium probably is at least as good as quick-freezing, and would keep fruits and vegetables in a more natural condition. Most foods can be preserved indefinitely in atmospheres of helium, but as some bacterial action may possibly occur without the presence of oxygen, fruits and vegetables might spoil eventually. It is probable that neither quick-freezing nor helium would preserve foods as long as the heat-canning method, but the results of helium research on this subject have more than justified additional study.

Although unavailable now in quantity, liquid helium is being developed and has interesting possibilities. Its extremely low temperature adapts it to many scientific studies and may have industrial applications.

Only slightly soluble in molten iron or steel, helium is being considered as a cleansing agent in the Bessemer process of steel manufacture in which air is blown through the charge to burn out the carbon and sulphur. Some gaseous products of combustion now are left in solution or as compounds in the metal. Undoubtedly detrimental, these gases might be eliminated by also blowing helium through the charge, creating better steel. A similar cleansing process might be found of value in the manufacture of other metals and possibly in some non-metals heated to a molten or liquid state.

Still largely unexplored is the idea of treating materials at extremely low temperatures. Most materials react in an odd manner to intense cold, and investigation possibly would disclose advantages in quenching some metals and perhaps non-metals, such as plastics, in liquid helium.

A better heat transfer agent and of lower density than air, helium used in and around the armatures of large-capacity dynamo electric generators dissipates heat and reduces resistance to the rotation of the armatures. In addition to acting as a coolant, helium will prevent sparking brushes from igniting explosive mixtures in the surrounding atmosphere.

Now used between lenses of some optical instruments, helium curtails errors of vision because of its properties of low refractive index and high heat transfer.

Although as yet untried as a tracing gas to determine the migrations of underground deposits of hydrocarbon gases, helium has the required characteristics—low density needed for penetration and chemical inertness to prevent compounding with the hydrocarbon gases under high pressures. Pumped into one well, helium would indicate the mi-

(*Continued on page* 154)

DECATUR IRON & STEEL COMPANY
DECATUR ALABAMA

FABRICATORS OF

STRUCTURAL STEEL FOR BUILDINGS & BRIDGES

ORNAMENTAL & MISCELLANEOUS IRON FOR BUILDINGS

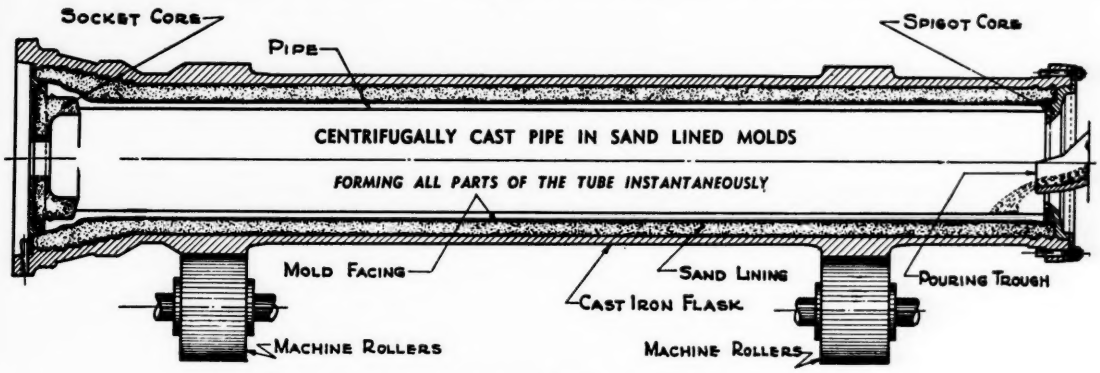
JAIL & PRISON CELL EQUIPMENT

TUG BOATS & BARGES

1887 — 57 YEARS CONTINUED SERVICE — 1944

The entire facilities of this Plant are now producing for Victory.

MONO-CAST CENTRIFUGAL PIPE



Cross Section Showing Method of Casting Mono-Cast Centrifugal Pipe

Mono-Cast Pipe 3" to 48" inclusive, is centrifugally cast in sand-lined molds in 16 ft. lengths —a process which produces a pipe of superior metal structure that is strong, dense, fine-grained, free from inclusions and blowholes, and tough yet soft. Mono-Cast Centrifugal Pipe is available with a wide variety of joints including Bell and Spigot, Doublex Simplex, Molox Ball and Socket, Roll-On-Rubber Ring, and Screw-Gland. Manufactured in America's largest individual cast iron pipe foundry.

AMERICAN CAST IRON PIPE COMPANY

BIRMINGHAM 2, ALABAMA

KILBY STEEL COMPANY

ANNISTON, ALABAMA

☆ ☆ ☆

Devoted 100 per cent to War Work

Helium—"Miracle Gas"

(*Continued from page* 152)

gratory tendencies of other gases if detected in greater volume or in the discharge from other wells in the field.

Not all scientists are convinced that helium is totally inert chemically. It has not yet been combined with any other substance, but research workers are deeply interested in the possibility that it may be combined under conditions still obscure and elusive. Helium compounds, if discovered, might well be useful.

Helium, the "miracle gas" that helps destroy lives on the warfront and save lives on the home front, indeed is still a fertile field for research.

Locomotive Coal Smoke Eliminated by Jets

Perfection of the design of overfire air jets has made possible the elimination of smoke from several coal burning locomotives of the Louisville and Nashville Railroad. Research work recently done by the Bituminous Coal Research Institute perfected the jets which are simple, inexpensive and can be applied to any standard coal-burning locomotive.

The equipment consists of jets to introduce air over the fire to cause turbulent mixing with unburned gases, thus promoting complete combustion and smokeless operation at low and moderate loads where smoke is often the most objectionable.

Results of the research done on these jets have been published in the Transactions of the American Society of Mechanical Engineers for October, 1943, in a paper "Overfire Air Jets" by R. B. Engdahl and W. C. Horton. Reprints are available upon request to BCRI at Washington or Columbus.

Florida Statistical Abstract

A statistical abstract of Florida's 67 counties, with pertinent data concerning 119 Florida towns and cities, has been prepared, according to Harold Colee, executive vice-president of the Florida State Chamber of Commerce. The abstract consists of 144 pages of information for postwar, industrial and agricultural planners and investors generally.

Demmon of Forest Service Leaves South

Elwood L. Demmon, since 1928 director of the Southern Forest Experiment Station at New Orleans, La., has been named director of the Lake States Experiment Station at St. Paul, Minn., the Forest Service, U. S. Department of Agriculture, announced recently. He succeeds Dr. Raphael Zon, director of the Lake States Station since 1923, who retires from active duty next month after 43 years of continuous work with the Forest Service.

Mr. Demmon is a senior member of the Society of American Foresters, a Fellow of the American Association for the Advancement of Science, a past president of the New Orleans Academy of Sciences, and a member of many other scientific organizations. He is the author of numerous scientific articles on various phases of forestry and rubber culture. He is succeeded at his New Orleans post by Charles A. Connaughton.

Southern Universities Establish Public Service Fellowships

Through funds supplied by the General Educational Board, three southern universities—Alabama, Georgia and Tennessee—have established fellowships for the training of individuals for public service in the South. Each fellowship carries a stipend of $750 and fees. On completion of the training the student will receive a certificate in public administration. While graduates of any 4-year college in the country are eligible for an award, those of southern institutions will be given preference.

Banking for Alabama Business

has been the first business of The First National since 1871. *This statement, showing the condition of the bank, June* 30, 1944, *indicates the nature and scope of its constructive service.*

RESOURCES

Loans and Discounts	$ 10,746,165.48
U. S. Obligations, direct and fully guaranteed	19,717,077.67
Alabama Bonds	2,138,064.34
Other Bonds and Securities	3,764,509.73
Federal Reserve Bank Stock	60,000.00
Banking House	1,175,000.00
Other Real Estate	1.00
Cash and Demand Exchange	12,033,138.47
Interest Earned—Uncollected	127,189.22
Cash Surrender Value Life Insurance Policies	137,065.07
Other Assets	30,773.63
	$ 49,928,984.61

LIABILITIES

Capital Stock		$ 1,000,000.00
Surplus		1,000,000.00
Undivided Profits		475,259.62
Reserve for Taxes, Interest, etc.		79,154.46
Reserve for Contingencies		166,547.55
Interest Collected—Unearned		25,186.87
U. S. Govt. and other public funds deposits	$18,588,939.19	
All other Deposits	28,593,896.92	
Total Deposits		47,182,836.11
		$ 49,928,984.61

The FIRST NATIONAL BANK OF MONTGOMERY

MONTGOMERY, ALABAMA

Capital $1,000,000
Surplus $1,000,000

Member Federal Reserve System and
Member Federal Deposit Insurance Corporation

ATLANTA, BIRMINGHAM AND COAST RAILROAD COMPANY

When Peace Comes . . . .

When Peace Comes . . . and we pray every night that the world conflict will be over tomorrow . . . the business structure of our country will undergo many changes. In the transition from war to peacetime, industries will be on the move. Many of them will come South . . . for the South has proved its worth to the nation and to the world both in the agricultural and industrial fields.

The Atlanta, Birmingham and Coast Railroad is proud of its part in the South's development in the past . . . and we look forward to contributing to the future growth and prosperity of the section . . . When Peace Comes.

B. L. BUGG, President

MARTIN STOVE & RANGE CO.
FLORENCE, ALABAMA
Coal and Wood Stoves, Ranges, Heaters and Holloware

•

KING STOVE & RANGE CO.
SHEFFIELD, ALABAMA
Coal and Wood Stoves, Ranges, Heaters and Holloware

•

MARTIN STAMPING & STOVE CO.
HUNTSVILLE, ALABAMA
Gas Heaters and Electric Water Heaters

Manufacturers of

CAST IRON PIPE
For Water, Gas, Sanitation

Alabama Pipe Company

General Office:
ANNISTON, ALABAMA

APCO

WATER, GAS AND SANITATION
VALVE, ROADWAY AND METER BOXES

— PLANTS —
ANNISTON GADSDEN TALLADEGA

Radio Speeds War Freight

(*Continued from page* 118)

cated atop the 13-story Baltimore and Ohio office building, a height of about 210 feet above street level. This fixed transmitter is operated by remote control by the dispatcher, whose orders are received through loud speakers in the engine cab and caboose.

Either the engineer or the conductor, whomever is addressed, picks up the French 'phone attached to each of these amplifiers, automatically cutting out the speaker and cutting in the 'phone through which he can talk back and forth with the dispatcher. When the instrument is replaced on the hook, the speaker is again in readiness for further messages.

Transmitting and receiving range of the system is placed between eight and ten miles. Fartherest point reached during the demonstration was a straight line distance between three and four miles. The system could be used for issuing orders to railroad tugs plying the waters of the local harbor. It also advances possibilities for passenger train control by widening the short range by a series of relay towers, although no such plans are in immediate prospect.

Roy B. White, Baltimore and Ohio president, who was formerly head of the Western Union Telegraph Co. and rose to railroad prominence in the communications field, predicted possibilities for radio in railroad operations, although he cautioned against expecting too much until many current problems are solved in its application to railroad practices.

The trial run made July 27 covered a round trip distance of about twelve miles, from Camden Yard in Baltimore, to a local shipbuilding plant, where a train of freight cars were delivered after being picked up enroute. The operations were directed entirely by radio. Voices of both the dispatcher and the train crew were clearly audible during the time.

Known as a VHF, or very high frequency outfit, the 50-watt, amplitude modulated transmitter and receiver sends out its signals from an antenna mounted on a 35-foot steel mast on the railroad's main office. Mobile transmitters and receivers, the former of 5-watt capacity, keep the engine and train crews in touch with the dispatching office.

High frequency radio, as used in the demonstration, is practically immune to ordinary interference. The 1000-horsepower Diesel-electric engine used in the test, the steel construction of the train shed, a big electric power generating station passed along the way, and the various electrical disturbances usually encountered in an industrial area had no effect on communication during the run.

A. S. Hunt, general superintendent of communications for the railroad, stated "two-way radio communication between trains and dispatchers will expedite the daily movement of thousands of freight cars in local yards." Success in the Baltimore area may lead to more general use in other railroad ter-

(*Continued on page* 158)

ALABAMA MILLS, Inc.

AN ALABAMA INSTITUTION

Manufacturing Cotton Textiles

WITH PLANTS AT:

ALICEVILLE	JASPER
WINFIELD	CLANTON
HALEYVILLE	GREENVILLE
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Providing employment for over 3,500 Alabama citizens

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WEST POINT MANUFACTURING COMPANY

COTTON TEXTILE MANUFACTURERS

WEST POINT, GEORGIA

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LANETT MILL
Lanett, Ala.

LANGDALE MILL
Langdale, Ala.

SHAWMUT MILL
Shawmut, Ala.

FAIRFAX MILL
Fairfax, Ala.

Selling Agents
WELLINGTON-SEARS CO.
65 Worth Street
New York, N. Y.

RIVERDALE MILL
Riverview, Ala.

BACON-McMILLAN VENEER COMPANY

Established 1905

BEST QUALITY ROTARY CUT
BAY POPLAR

STOCKTON, ALA.

CATHEY LUMBER COMPANY

BAND MILLS

MONTGOMERY, ALA. **COLUMBUS, GA.**

Choice
Southern Hardwoods
and Pine Boards

T. M. CATHEY
C. C. CATHEY
Owners

Sales Office: MONTGOMERY, ALA.
B. G. JONES, Sales Manager

Radio Speeds War Freight

(*Continued from page* 156)

minals, according to officials.

J. H. Wallis, recently appointed communications engineer of the Baltimore and Ohio, echoed Mr. White's observations of radio possibilities in railroad operation by pointing out that the picture is not as favorable as published information would indicate.

"The equipment used thus far," he said, "is largely emergency equipment and is not adapted for permanent use by railroads for several reasons. First, the electrical and mechanical features of such equipment do not fill the requirements necessary for the specialized type of service necessary for railroad operation. Second, and most important, that type of equipment is designed to operate on frequencies between 30 and 40 megacycles, and those frequencies are not available for unlimited service and are for the most part granted for emergency service."

"Commercial activity in the 100 to 400 megacycles region has been rather limited," he continued, and "as a result there are many techniques and practical problems to be solved before these channels can be put into regular everyday service. Some commercial communication networks, the Army and Navy, and the amateur radio organizations, proved some years ago that successful communications could be maintained on these frequencies under most of the conditions encountered in railroad service."

Mr. Wallis stressed that there is a considerable amount of research and experimentation yet to be done to develop equipment suitable for railroad service. The Baltimore and Ohio is immediately adopting the best available equipment to expedite the movement of war materials and promote safety, at the same time making an exhaustive study of technical and operational problems."—(S.A.L.)

Wartime Forest Fire Prevention

Opening of the 1944 nation-wide Wartime Forest Fire Prevention program has been announced by the U. S. Forest Service and the Association of State Foresters. Reports from many regions indicate that unusual weather conditions and increased logging activity have greatly increased the danger of forest fire this year when production of lumber and pulpwood is running behind war needs.

Citing records to show that in an average year forest fires burn over an area almost as large as New York State, kill enough timber to build 25,000 five-room frame houses—or enough to house the entire pre-war population of a city the size of Washington, D. C. and drain nearly 1,000,000 man days of fire fighting labor from factories and farms, the foresters warn of woods conditions which have considerably increased the chances of the carelessly tossed lighted match, or cigarette, starting a forest fire this year.

Tar Products Concern Starts Carolina Plant

The Crowley Tar Products Co., has completed remodeling the plant of the Ozone Oil Co. at High Point, N. C., and expects to start production of road-building tars and coal tar acids in the near future.

W. E. BELCHER LUMBER COMPANY, INC.

Manufacturers of

YELLOW PINE & HARDWOOD LUMBER AND BOX VENEERS

Specialize in manufacturing Short and Long Leaf Yellow Pine timbers sizes 4 x 4 to 20 x 20—8 to 42 foot lengths.

Shipping points:—Centerville, Ala. on GM & O RR Lines.
Plantersville, Ala. on Southern RR Lines.

Sales Office
BELCHER LUMBER SALES COMPANY
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Telephones 3371 & 2491. Centerville, Ala.

SOUTHERN COACH AND BODY CO.

EVERGREEN, ALABAMA

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STANLEY L. GREEN, *Partner*

SINCE its inception in 1941, this company has confined its output to Victory Models and U. S. Government War Work.

An allotment of integral Busses will be built starting November 1st, 1944, and after that date you can buy a Bus designed for Southern use and built entirely in a Southern plant.

MERRIMAC HAT CORPORATION

Manufacturers of

Ladies' Wool Felt Bodies and Men's Finished Hats

GREENVILLE, ALABAMA

☆

AVARD DARBY
Manager Greenville Division

Main Offices:
Amesbury, Massachusetts

McLaughlin "Soil Mixer"

(*Continued from page* 107)

by the power take-off. The shaft on which the discs are mounted is geared directly to a differential on the left side of the machine. This, in turn, is connected to a three-speed transmission. A spring type friction clutch joins to a slip joint drive shaft, which attaches to the power take-off of the tractor.

It is possible, Mr. McLaughlin points out, to secure three different speeds on the rotating cutters ranging from 130 to 540 revolutions per minute. All of the mechanism is mounted in an angle-iron frame hinged in the middle to permit the rotating discs to be lowered to cut different depths into the soil.

In operation, the 1,000-pound mixer literally grinds and pulverizes the soil and the large roller in the rear rolls down the pulverized soil. Width of the cut is approximately 22 inches.

The machine has been used to prepare the land for planting various crops. In one unplowed field thickly covered with swamp grass and rag weed, some of which was more than five feet tall, the "soil mixer" in one operation plowed and pulverized the soil, cut the weed and grass stalks into pieces and incorporated them properly into the upper layer of soil.

Commissioner McLaughlin had five objectives in mind when he started out to design the mixer. The first was to provide a thorough and well prepared seed-bed free of air pockets, leaving the soil in such a condition as to reduce cultivation to a minimum. The second aim was to preserve the moisture contained in the soil at the time of mixing.

His third aim was to spread commercial fertilizer by dropping it in front of the rotor. Experiments have shown, he says, that fertilizer thoroughly mixed in the soil will produce from 15 to 25 bushels more corn per acre than the same fertilizer will produce if spread otherwise.

The fourth purpose of his machine is to chop, cut and mix stable manure, litter, and cover crops such as beans, rye, wheat, grass and weeds into the soil for the purpose of retaining the moisture, which through Nature's processes form a compost, gathering nitrogen and other elements into the soil and making the minerals available from the soil and plant food to the feeder roots of the plants.

Commissioner McLaughlin's fifth aim was a reduction in the number of man-hours required for preparing the soil for the planting of a crop. According to reports, the machine will be manufactured at a cost not to exceed $400. It is used by the inventor with a small International Farmall A tractor. (S.A.L.)

North Carolina Revenue Reaches All-Time High

North Carolina revenue collections for the fiscal year ending June 30, 1944, amounted to $111,251,858.04, the greatest in the history of the state, according to Commissioner of Revenue Edwin Gill.

The general fund collections exceeded the 1943 general assembly's estimation on 1943-44 collections by $24,000,000 and as a result it is estimated that North Carolina state general fund surplus will approach $60,000,000. In June of 1943 the state general fund surplus was $39,370,633.

SESSIONS COMPANY, Inc.

PIONEERS OF ALABAMA'S PEANUT INDUSTRY

Manufacturers of

Peanut Butter — Peanut Oil — Peanut Products

Refiners of Vegetable Oils

Sessions Brand *Homogenized* Peanut Butter

Gold Craft Peanut Butter — SESSIONS Peanut Oil

School Day Peanut Butter — SESSO Peanut Oil

LOCATED IN THE PEANUT BELT OF ALABAMA

"Where Peanuts Grow"

ENTERPRISE, ALABAMA

T. R. SIMMONS
JOE R. SIMMONS
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DR. JOHN T. SIMMONS

CLEVELAND LUMBER COMPANY

MANUFACTURERS
and WHOLESALERS

JASPER, ALA.

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MORETTI-HARRAH MARBLE CORPORATION

Quarriers and Manufacturers of America's Most Beautiful White Marble

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Manufacturers of

SHORT LEAF PINE BOARDS

MILL AND SHIPPING POINT

Union Springs, Alabama

CENTRAL OF GA. RY.

P. O. BOX 72 PHONE 286

Newport Industries,
INCORPORATED

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Manufacturers of

NAVAL STORES
PINE OIL
TERPENE CHEMICALS

Bay Minette, Alabama

Other Plants at

PENSACOLA, FLORIDA and DeQUINCY, LOUISIANA

Sales Office

230 PARK AVENUE, NEW YORK, N. Y.

Revised Price Control Act

(*Continued from page* 120)

it acted was: "That many dealers would go into more essential employment, or into the Army, enabling the surviving dealers to do business profitably by reason of the larger gross, even with smaller profits." Reduced to plain language, that means OPA pursued its activities on the "Assumption" that many small businesses would be wrecked.

The agency further confesses candidly that it was not completely open in its declarations of policy, contending that "the problem of telling the public the 'whole truth'" about its practices was "not so much a moral question as a question of the degree of frankness expedient in given cases." In short, theirs (the retailers) not to question why; theirs but to do or die.

The outline admits "the partial successes, the repeated failures, and the general advance to date." It concedes that "the result is as planned and at other times it is an unpredictable surprise." OPA, it goes on, has been torn by "conflicts of points of view among key men . . . overlapping responsibilities and jurisdictions . . . multiplication of clearance functionaries" and so on. Some price schedules proved "too complex," and the legal department has been charged with "unusual complexity and unintelligibility of orders and amendments," the "lack of enforceability of orders as drawn . . . failure of orders to carrry educational value or consumer appeal."

Some members of Congress have charged that OPA's powers have been used in an attempt to alter the nation's economy. There have also been expressions in some quarters that price controls and rationing might have to continue after the war. OPA faces this squarely, setting forth that the present historical analysis will be valuable "in the event America gets caught in another emergency of peace or war" and that "general policy problems" of OPA include "the liberal-conservative issue or the question of 'social gains' . . . to what extent should controls be inaugurated in wartime to change what the officials deem to be an undesirable economic or social practice?'"

Surplus Aircraft Sales

Jesse H. Jones, Secretary of Commerce, recently announced that Defense Plant Corporation has completed arrangements for the sale of war surplus airplanes from the following southern sales centers: J. D. Gillespie, Gillespie Airport, Nashville, Tenn.; Clarence Ludwig, Sky Harbor Airport, St. Petersburg, Fla.; Ashburn Flying Service, Hybla Valley Airport, Alexandria, Va.; Cannon Aircraft Sales & Service, Cannon Airport, Charlotte, N. C.; Chapman Air Service, Callender Airport, New Orleans, La.; Aviation Enterprises, Ltd., Municipal Airport, Houston, Texas, and Brayton Flying Service, Inc., Municipal Airport, Robertson, Mo.

Delivery to some of these sales centers has already been effected. There is a limited number of light 65 horsepower trainers, and it is expected these will be sold as quickly as they are put up for sale. More of the primary trainers, ranging from 165 to 220 horsepower, have been declared surplus than light trainers. Large twin-engine cargo planes will not be available, except in very limited quantities, until the war ends.

ADAMS, ROWE & NORMAN, INC.

Producers of "PORTER"

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BLACKSMITH COAL

High Grade Coking and Industrial Coal

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COAL and COKE for every use

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PRODUCERS AND SHIPPERS

High Grade Steam and Domestic Coals

COMER BUILDING

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MINES
Brilliant, Ala.
Carbon Hill, Ala.
Lindbergh, Ala.
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Nauvoo, Ala.

J. L. WARREN, President V. O. WARREN, Sec. & Treas.

Enterprise Oil Company

Cotton Seed, Peanut Products and Fertilizer

ENTERPRISE, ALABAMA

DWIGHT MANUFACTURING COMPANY

ALABAMA CITY

Alabama manufacturers of drills, twills, herringbone drills and twills, sateens, abrasive drills, chafer fabrics and constructions of like nature.

Selling Agents, MINOT HOOPER and COMPANY,

40 WORTH STREET, NEW YORK

Alabama's Own Product

Genuine Original Perfection

Tuftless Felt Mattress

MANUFACTURED FOR OVER 50 YEARS

JUST THE SAME TODAY AS THEN

100% NEW MATERIAL 8 oz. TICKING

SOLD BY ALL FURNITURE DEALERS

PERFECTION MATTRESS & SPRING CO.

Birmingham, Ala.

The

OPP COTTON MILLS

•

The

MICOLAS COTTON MILLS

•

Turning Our Wheels For Victory!

OPP, ALABAMA

Revere Expands at Halethorpe

(*Continued from page* 112)

floor of a small elevator serves this purpose when the pour is started. Afterwards, the chilled walls of the molds cool the hot metal to the point where it solidifies sufficiently to gravitate in its final cylindrical shape into a pit. The descent is controlled by the slowly sinking elevator, whose movement is coordinated with the pouring operation.

The new forging facilities will be primarily for the manufacture of airplane parts and, according to expectations, will be finished sometime this fall. Completion date for the casting unit being installed in the existing building is placed during September.

Located adjacent to the site of the Fair of the Iron Horse, the Baltimore and Ohio Railroad's review of its century of development held fourteen years ago, the Revere-operated plant is one of two constructed in the Halethorpe section since the beginning of the war.

About a mile closer toward Baltimore, Westinghouse Electric & Manufacturing Co. has a comparatively new windowless plant built of timber, glass, concrete and tile, in contrast to the brick, steel and glass of the Revere plant. The two factories are seen as the beginning of a new Baltimore industrial area. — (S.A.L.)

BRILLIANT COAL COMPANY

1612-17 First National Building

Birmingham 3, Alabama

MINERS AND SHIPPERS

Of the famous

BRILLIANT COAL
(T. M. REG. U. S. PAT. OFF.)

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Specializing In Combustion Engineering And Equipment Problems

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ROBBINS TIRE & RUBBER COMPANY

FACTORY AT MUSCLE SHOALS
OFFICE—TUSCUMBIA, ALABAMA

Long before Pearl Harbor—in fact 1931 —these tubes have been manufactured.

Heavy duty tubes for Lend-Lease and export. When peace comes wider distribution will be possible. Insist upon Robbins Tubes, not because they are made in Alabama, but because they are the best made anywhere.

Distributors all over United States

BONITA RIBBON MILLS

Manufacturers of

Narrow Ribbons

BREWTON, ALABAMA

NEW YORK OFFICE — 23 EAST 26TH STREET

ANNISTON MANUFACTURING COMPANY

ANNISTON, ALA.

Makers of

STANDARD AND SPECIAL—

MEDIUM WEIGHT

DRILLS

In Widths Running from
30 Inches to 40 Inches Inclusive

Also Herringbone Twill for Army and Navy

Master Vibrator Line

(*Continued from page* 126)

down to 6 ft. 6 in. Standard machines are manufactured to produce a flat slab. Machines for producing any crown or invert can be obtained on special order.

The complete line of vibrators, manufactured by Master, consists of electric driven ½ h.p., 1½ h.p., and 3 h.p. Also, gasoline engine driven vibrators 1½ h.p., 3 h.p. and 4 h.p. for light, medium, and heavy duty work.

The new improved metal to metal welded flexible drive, now used on all Master Vibrators, has proven that a flexible shaft casing can be flexible enough to be handled easily, and at the same time, tough enough that it cannot collapse, stretch or shrink. The metal ferrule on each end of the casing is welded to especially designed inner liner that requires no further support.

Marion Directors Elect Board Chairman, President

The board of directors of the Marion Steam Shovel Co., Marion, Ohio, at a special meeting held recently, elected a new chairman of the board and a president and general manager to fill the vacancy left by D. J. Shelton, deceased.

J. M. Strelitz, prominent local attorney, affiliated with banking and manufacturing interests, was made chairman of the board. Mr. Strelitz has been a director of the company since 1931 and its general counsel for the past twenty years. In the latter capacity he has been in close contact with Marion's many customers and is acquainted with their problems.

C. F. LaMarche, successful local manufacturer and production authority was appointed president and general manager. Mr. LaMarche has served the Marion Steam Shovel Co. as a director since 1939 and is thoroughly familiar with the shovel industry.

Hough Gets Army-Navy Star

Frank G. Hough Co., of Libertyville, Illinois, producers of road building and material handling equipment, have been awarded a white star for its Army-Navy "E" Pennant, it is announced by Frank G. Hough, president of the firm. This star award was made to signify that the company has maintained its high production standards of war materials since last December, when it was awarded the "E" Pennant. Tractor shovels and sweepers and special ordnance equipment are this company's war-time production.

Galvin Named Tyson Head

Ed. R. Galvin, general sales manager for R. G. LeTourneau, Inc., since 1938, has resigned to become president and a director for the Tyson Bearing Corp., of Massillon, Ohio.

Mr. Galvin was one of the prime directors of the new, exclusive LeTourneau sales distributorship policy. Under his leadership, more than 65 per cent of the new LeTourneau distributors have already been appointed and the many applications from top-flight sales companies for the remaining territories will continue to receive prompt and effective consideration from the well-trained sales staff Mr. Galvin formed to do the entire, important task.

Mr. Galvin, familiarly known as "Ed" to hundreds of equipment men, came to Peoria from Ohio in 1927 to join the Caterpillar Tractor Co., as a District Representative. He shortly was promoted to Eastern Sales Manager and then to general sales manager. Quick to see the import of new developments in earthmoving, Mr. Galvin resigned as General Sales Manager at "Caterpillar" to accept a similar position at R. G. LeTourneau, Inc., in November, 1938, a short time after the Tournapull first made its appearance.

N. & W. Relief Outlay

Benefits amounting to $164,622 were paid to members of the Norfolk and Western Railway Employees' Relief Fund during the fourth quarter of 1943, according to the quarterly report of the company's relief and pension department. Receipts of the fund during the quarter totaled $204,625. At the end of the quarter the fund had a balance of $4,759,066. Since establishment of the fund in July, 1917, members and their families have been paid a total of $14,499,395 in sickness, accident and death benefits. The entire expense is borne by the railroad.

C. G. KERSHAW

Contracting

Company,

Inc.

GENERAL CONTRACTORS

BIRMINGHAM, ALA.

EMORY PIPE & FOUNDRY COMPANY

(INCORPORATED)

Manufacturers of

Cast Iron Soil Pipe and Fittings

Cesspools, Gas and Water Service Boxes, Cistern Rings and Covers, Trap Screw Ferrules.

Plumbers' Cast Iron Specials

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ANNISTON, ALABAMA

RUDISILL FOUNDRY COMPANY

Manufacturers

Soil Pipe and Fittings, Pressure Pipe Fittings

Valve, Roadway and Service Boxes

Ornamental Lamp Standards

Gray Iron Castings

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ANNISTON, ALABAMA

Everything for the Contractor - Road Builder - County or Municipality

International Tractors and Power Units
J. D. Adams Road Building Equipment
Bucyrus-Erie Scrapers

Northwest Shovels and Draglines, Jaeger
Pavers, Mixers and Pumps, W. E. Grace
Asphalt Equipment

Sales Parts Service Rentals

Now For the National Defense To Win the War—Keep 'Em Rolling

SAM RAY RAY-BROOKS MACHINERY COMPANY, INC. JOHN BROOKS

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Established in 1874

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ADMINISTRATIVE AND COLLEGE CLASSROOMS

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Fifth Year Graduate Curriculum in Teacher Education.

Four-Year Teacher-Education Curriculums for Elementary School and Secondary School Teachers.

Four-Year Non-Professional Curriculum.

High School—Elementary School—Nursery-Kindergarten.

Branch Junior College at Mobile.

Branch Summer Schools at Birmingham and Mobile.

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Producing for Victory!

WHALEY

LUMBER & CONSTRUCTION CO.

"We Build From Tree to Finished Job"

TROY, ALABAMA

Main Office . . . Sash and Door Plant . . . Planer and Saw Mills

PHONE 245

W. F. BRADLEY LUMBER COMPANY

Manufacturers and Wholesalers of Hardwoods and Pine and Resawn Box Shook

Band Mills: Montgomery, Ala.

MIXED CARS • SURFACING • KILN DRYING

MONTGOMERY, ALABAMA

SOIL PIPE and FITTINGS

Anniston Foundry Company, manufacturer of Soil Pipe and Fittings, is one of the pioneer industries in this line, as well as the largest individual unit engaged in the business. It was organized in 1902, and during all these years has consistently maintained the high standards of quality of its products, and the reputation for fair dealing established by its founders. The company gives employment to approximately 400 persons and its annual payroll is approximately $500,000.00 with an annual capacity of 30,000 tons.

Wm. H. Deyo is President of the Company, R. E. Kelley, Secretary, and H. A. Young, Treasurer.

ANNISTON FOUNDRY CO.

ANNISTON, ALABAMA

$2,500,000 Cement Plant Proposed for Memphis

Plans have been completed by the Missouri Portland Cement Co., of St. Louis, Mo., for a 750,000-barrel cement plant at Memphis, Tenn., and construction will be started as soon as the War Production Board makes the necessary authorization.

According to M. Moss Alexander, president of the company, a 30-acre site has been purchased on North Thomas Street between the properties of the E. L. Bruce and Chalfant Dock properties.

First cement plant for Memphis, the new factory will manufacture a standard portland, a high early strength, a masonry and a concrete products cement. The principal raw material—limestone—will be brought from a quarry at Batesville, Ark., as there is none available in the immediate Memphis area.

The decision to establish the plant was reached after a survey of the market potentialities in the Mid-South and because of the company's aim to complete the triangle of service that will be formed by the new plant and two existing operations at St. Louis and Kansas City.

Officials believe that if the War Production Board releases the equipment and material required to build the plant that it will be in operation in time to serve the immediate post-war market, which is expected to be extremely active.

Missouri Portland Cement Co. now operates a modern sand and gravel plant in Memphis, at 1600 Chelsea Avenue, having been active in this field in the Memphis area for 40 years.

Hercules to Expand Hopewell Ethyl Cellulose Facilities

Hercules Powder Co. will expand the output of its Hopewell, Va., plant by sixty per cent to meet the rising needs for ethyl cellulose in the manufacture of ammunition, it was announced last month by Mahlon G. Milliken, general manager of the company's cellulose products department.

Allied retaliation to German rocket attacks was indicated by the announcement, which pointed out that rocket powder production will be stepped up sharply within a few months and that construction of huge plant facilities in Wisconsin was advancing toward this goal. Hercules is already producing rocket powder at another Virginia location and in Kansas and New Jersey.

The Hopewell expansion will include construction of an ethyl chloride production unit for converting by-product materials of the ethyl cellulose plant. No cost was announced and no completion date was revealed, since the latter will depend on how rapidly materials are made available for the project. Construction is starting.

Military uses for the ethyl cellulose produced at the plant include rocket assemblies, shell ignitors, other ammunition parts, aircraft parts, lacquers, flashlights, plastic wrapping, known as "plastic peel" for spare parts for aircraft, autos, trucks and other equipment shipped to the fighting forces.

Shell Oil Authorized to Build Houston Alcohol Plant

The War Production Board has authorized the Shell Union Oil Co. to construct an allyl chloride and allyl alcohol plant at Houston, Texas. Construction is starting. The new plant is the result of many years of research and development work on the part of the Shell Development Co. Allyl chloride and allyl alcohol are used in the synthetic chemical industry. Output of the new plant, however, will go principally for manufacture of plastics for aircraft and war material.

National Gypsum Reveals Plan to Construct Baltimore Plant

National Gypsum Co., of Buffalo, New York, will construct a large gypsum processing plant in the Canton section of Baltimore. A $1,000,000 municipal pier is proposed to serve the new unit, which is expected to employ 1,000 workers.

The
A. B. Carroll
LUMBER COMPANY
Hurtsboro, Ala.
MANUFACTURERS OF
PINE LUMBER
• No. 2 AIR DRIED BOARDS OUR SPECIALTY
MILLS at HURTSBORO, Alabama, and PITTSVIEW, Alabama on the S. A. L. Ry.

W. L. Brakefield Lumber Company
MANUFACTURERS
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Phone 841 and 842
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MARSHALL LUMBER & MILL CO.
INCORPORATED
MANUFACTURERS YELLOW PINE LUMBER
CONCENTRATION YARD—MILL WORK
MONTGOMERY, ALABAMA

STEEL CITY LUMBER COMPANY
BIRMINGHAM - - - ALABAMA
ESTABLISHED 1907
Specialists in Serving the Retail Trade Lumber Dealer
YELLOW PINE AND RED CYPRESS
Finish, Flooring, Siding, Ceiling, Framing, Sheathing, Lath & Shnigles
— Also —
Oak and Maple Flooring — California Redwood — Ponderosa, Sugar Pine — Douglas Yellow Fir — Red Cedar Shingles
Our Motto: "Quality and Service"
Necessary that we serve government agencies during the emergency.

ALABAMA BRICK & TILE CO.
Everlasting Clay Products
Manufacturers of Drain Tile, Building Tile
Common Brick, Face Brick
Dealers in Fire Brick, Sewer Pipe, Flue Lining, Wall Coping
DECATUR, ALABAMA

W. P. BROWN & SONS
LUMBER COMPANY, Inc.
Fayette, Ala.
Operations in Alabama at:
TUSCALOOSA PELL CITY BLANCHE
SHELBY MORRIS
BROWNVILLE FAYETTE GUIN

Building Code Approved By Standards Association

A building code standard, which can be used by cities and towns all over the country, has been approved by the American Standards Association. The purpose of this standard is to provide for a suitable form of organization for building departments, and for efficient administration of building code work. Building codes are aimed at securing the public safety, health, and general welfare insofar as buildings and other construction are concerned, and the standard — Administrative Requirements for Building Codes—should be particularly valuable to the average town and city which desires to establish an up-to-date system of enforcement.

The new standard was developed under the technical leadership of the American Municipal Association and the Building Officials' Conference of Amreica, Inc. The standard defines in broad terms the powers, duties and responsibilities of the enforcing official and covers construction, alteration, repair, equipment, use and occupancy, location, maintenance, removal and demolition of all kinds of structures.

The standard provides for the establishment of a building department, sets up qualifications for the head of the department, and deals with the organization of the department to the extent of giving the building official power to appoint the necessary inspectors, and other assistants, subject to approval by higher authority.

Provisions of this standard give the building official power to adopt rules and regulations that will supplement statutory provisions. Frequently such rules will be based on national standards. The advantage of such a procedure is that it permits the code to be kept up to date without going through the rather cumbersome process of amending the code each time a nationally recognized standard is revised. The rule-making power is safeguarded by requiring that notice of intent to adopt rules shall be duly published, and by providing for public hearings on the rules.

Attention is given to new materials and new methods of construction, since these matters are expected to be of primary importance in the post-war period.

The standard indicates the essential information to be furnished on an application for a permit. Examination of the plans may be waived providing the architect or engineer presents an affidavit to the effect that the proposed building complies fully with the requirements of the law, and agrees to certify that the completed building has been erected in accordance with the code.

According to the standard, a certificate of occupancy must be obtained from the building official before a new building can be occupied or a change in occupancy can take place in an existing building. This has been emphasized in order to prevent any building from being used by a more hazardous occupancy than that for which it was originally designed.

Provisions are included for the establishment of a board of appeals, which may, when appealed to and after hearing, vary the applications of the provisions of the building code.

Inspection and the posting of floor loads are also covered. Two appendixes are included, which discuss code enforcement and fees.

Caine Steel Appoints

Caine Steel Co., 1820 N. Central Ave., Chicago 39, Ill., manufacturers of corrugated steel sheet piling, announce the appointment of the following representatives in southern states: Delaware and Maryland, General Supply & Equipment Co., 530 E. 25th St., Baltimore 18; Florida, Florida Equipment Co., 1205 W. Forsythe St., Jacksonville 3, and Hart Machinery Co., 2613 Fourth Ave., Tampa 1; South Carolina, Bell-Lott Road Machinery Co., 824 Lady St., Columbia; Texas, Francis Wagner Co., 1417 Texas St., El Paso.

We read the MANUFACTURERS RECORD with interest and want to congratulate you on the worthwhile information that it now included and has been in the past included in your good magazine.

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J. R. CROW, *Prop.*

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Standard Oil Companies of Louisiana and New Jersey to Be Merged

An agreement has been reached between the Standard Oil Company of Louisiana and the Standard Oil Company of New Jersey to consolidate the two companies into one corporation at the end of the current year, according to a recent statement by M. J. Rathbone, president of the Jersey company. The Standard Oil Company of Louisiana is now a wholly-owned subsidiary of the Standard Oil Company of New Jersey. No material change in the organization at Baton Rouge, La., present headquarters of the Louisiana company, is planned. The same local management will continue to handle the affairs of the company in the Louisiana territory.

M. J. Rathbone, for many years president of the Standard Oil Company of Louisiana and who recently was elected president of the Standard Oil Company of New Jersey, will head the consolidation of the two companies. M. W. Boyer, executive vice president of the Louisiana company, will become a vice president of the consolidated company and will continue to be located at Baton Rouge. Sales activities will continue to be directed as at present.

Phosphate Rock Quotas

The program for world utilization of phosphate rock, most of which is required for agricultural purposes, calls for the production of 10,000,000 tons in the agricultural year which began July 1. Goals for the following year, 1945-46, will be set at 12,767,000 tons. Production for the calendar year, 1943, totaled 5,126,232 tons, over 95 per cent of which was mined in Florida and Tennessee.

100-Octane Gasoline

(*Continued from page* 106)

TNT. The amount of energy that can be obtained from gasoline when it is burned in an internal combustion engine depends on the pressure within the motor's cylinders. The phenomenon of detonation, or knocking as it is commonly referred to, occurs in high compression motors, resulting in loss of power and overheating of the engine.

In an antomobile engine detonating is annoying; in an aircraft engine, it is rapidly destructive. A detonating aircraft engine may actually destroy itself before it has run long enough to lift the plane off the ground. The higher the octane rating of gasoline, the greater is its capacity to be compressed without detonating.

Baltimore Clean-Up Committee

The Block Maintenance Committee of Baltimore's Downtown Committee has underway an intensive campaign to persuade building owners in the downtown business area to clean up and rehabilitate their properties now, that they may be "preened for profit and prestige at postwar."

Designed to stimulate interest in cleaning up, polishing up, rebuilding and remodeling downtown Baltimore, the program will include personal calls on building owners and tenants, a special publication, "Our Block" and continuing study of ways and means of remvoing unsightly signs, and improving the overall appearance of business structures. The Committee holds the theory that when conditions return to normal, trade will seek out the more attractive places.

Georgian Heads National Compress Association

T. E. Fletcher, Cordele, Ga., was elected president of the National Cotton Compress and Warehouse Association at its recent annual session held in New Orleans. Mr. Fletcher succeeds R. Dow Ernst of Houston, Tex.

Cutler-Hammer, Inc., electrical manufacturers, Milwaukee, Wis., announce the appointment of G. E. Hunt as acting manager of the company's Atlanta, Ga. territory, with offices and warehouse at 134 Marietta St., N. W., Atlanta. Mr. Hunt has had wide experience in the electrical field and has been with Cutler-Hammer since 1920.

Copper Output Falls

Copper production for the first quarter of 1944 fell below previous estimates, primarily because of manpower difficulties, according to Michael Schwarz, director of the Copper Division of War Production Board.

NOTICE OF REDEMPTION

BOGANSVILLE TOWNSHIP, SOUTH CAROLINA

$38,000 Highway Bonds

NOTICE IS HEREBY GIVEN that Bogansville Township in the County of Union and State of South Carolina, has determined to redeem, and will redeem, on September 15, 1944, all of its $38,000 Highway Bonds dated January 1, 1924, and payable, $2,000 on January 1st in each of the years 1945 to 1948, inclusive, and $3,000 on January 1st in each of the years 1949 to 1958, inclusive, and accordingly on September 15, 1944, there will become due and payable upon each of said bonds, upon its presentation and surrender at the office of the Central Hanover Bank & Trust Company, in the City of New York, New York, the principal thereof and accrued interest thereon to September 15, 1944.

Each bond surrendered must be accompanied by all coupons for interest accruing after the 1st day of July, 1944. No interest shall accrue or be payable on any of said bonds after the 15th day of September, 1944.

By order of the County Supervisor and Township Commissioners of Union County, South Carolina.

Dated, August 7, 1944.

W. F. CALDWELL,
County Treasurer of Union County, South Carolina.

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